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ABSTRACT

In an attempt to analyze the current status of the University of Calgary, a Review Committee was formed, comprised of eight academics of diverse rank drawn from various faculties. Presented is the report of the committee. Chapter I, "The University in Context," examines universities in Canada with detailed emphasis on the Alberta context, including objectives, realities, resources, and opportunities. Chapter II, "The University of Calgary: Planning and Management," examines academic planning, preliminary assessment of faculty/support unit plans, position control policy, review of new program and other academic development proposals, internal reallocation of resources, evaluation of programs and academic units, evaluation of support services, quantitative measures in the budget process, and university information systems. Chapter III, "The Faculties," offers general comments on such areas as education, engineering, fine arts, graduate studies, law, medicine, and science. Faculty, students, teaching, physical resources, and academic support are discussed in "People and Resources." Chapter V, "A Decade for Development of Excellence," examines future trends and strategies. Recommendations were numerous and included suggestions such as: the university should establish a permanent Institutional Policy and Priorities Committee; reaffirmation must be made of the concepts of intellectual and pedagogical autonomy; and the Budget Committee must give serious consideration to providing an adequate financial basis for continued growth in existing programs and development of new programs. The appendix contains the names of committee members. Tables and figures are provided. (LC)

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THE SHRINKING MAZE

Report of
The University Program Review Committee

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The University of Calgary
October, 1980

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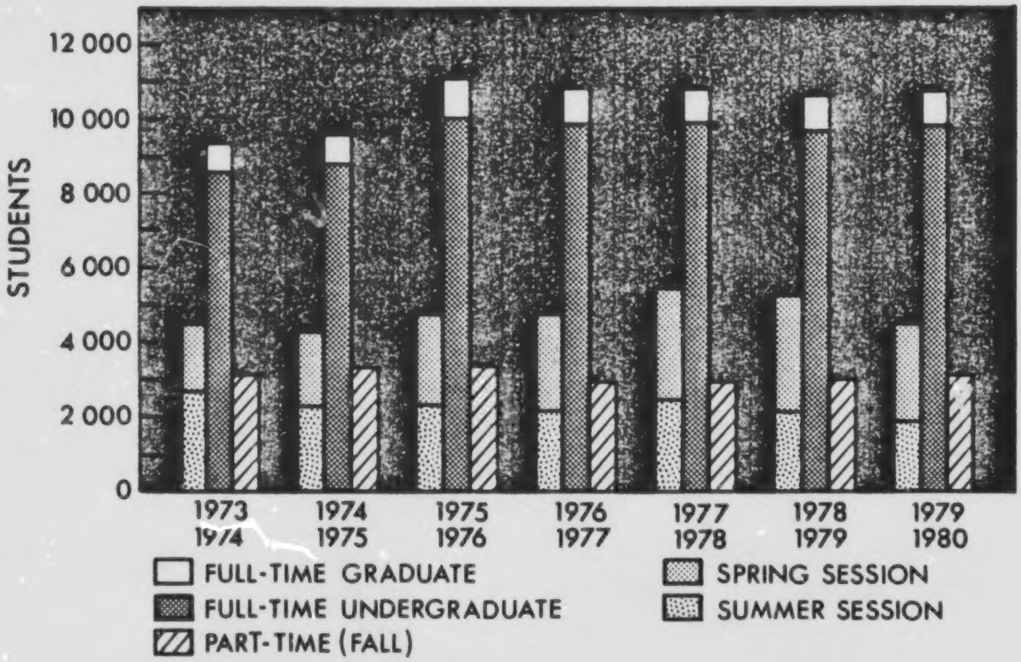

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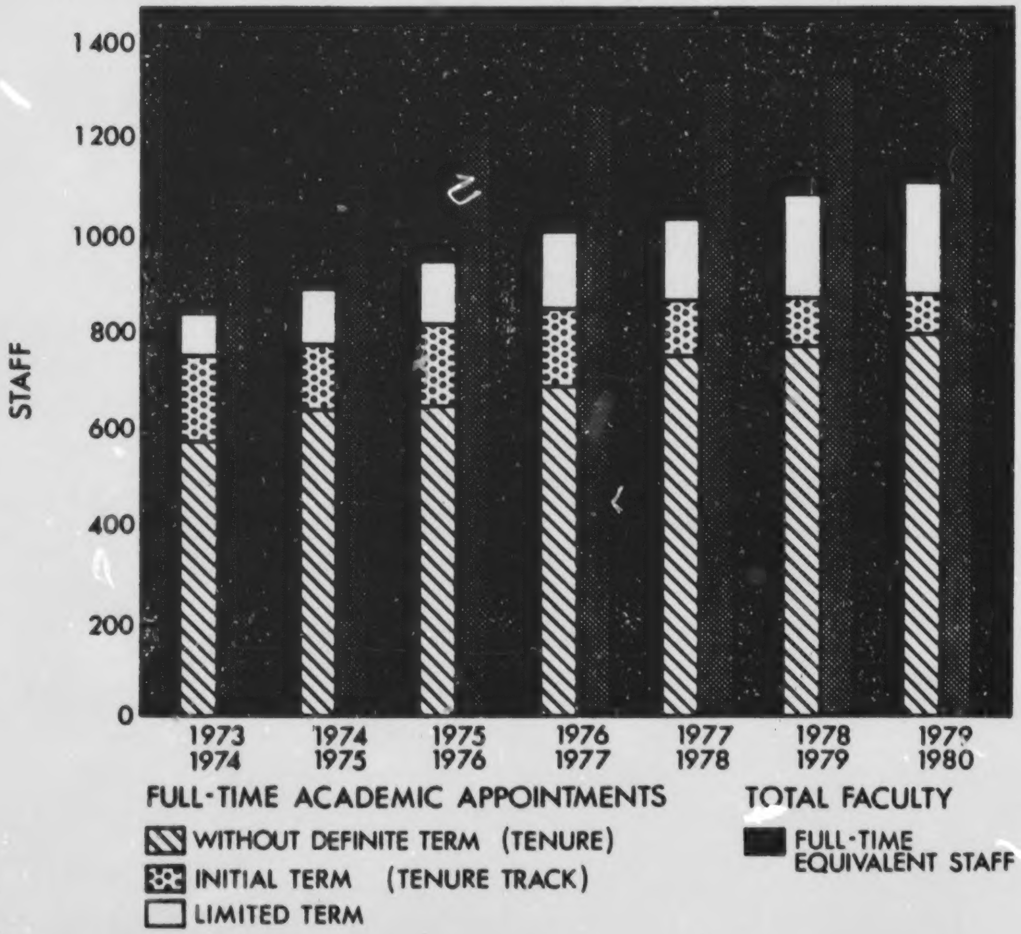

PREFACE

There is a commonly-held belief in these times that large institutions, be they governments or universities, are no longer capable of being managed. Much of the characteristic public distrust of and disenchantment with all types of institutions stems from this basic and pessimistic view. It seems to be assumed that certain institutions are incapable of change because they are too large, too complicated and hence too difficult to move. It is true that many institutions have grown like Topsy, with little forward planning or thought as to the eventual form they should take in order to serve their basic purposes. Consequently, some institutions appear to be out of control, or at least beyond control.

The University of Calgary has grown rapidly during its fourteen years of existence and is today one of Canada's major institutions. We do not, however, regard it as being out of control. Nevertheless, the present seemed to be an opportune time to take stock of where the University stands and where it hopes to head in the future. In an attempt to analyze the current status of the University and to develop an appropriate program for the decade ahead, the President appointed, in the Spring of 1979, the University Program Review Committee.

The Committee was comprised of eight academics of diverse rank, drawn from various Faculties. Each brought to the task a different background within the academy, and each was able and willing to contribute in a specific way. The President elected to chair the Committee himself. (A list of Committee members appears as Appendix I to this Report).

Using the University's Development Plan 1976-1985 as a starting point (referred to in some detail in Chapter II), the Committee began its task by reviewing individual Faculty plans in the light of what it perceived to be the changing realities and emerging opportunities (see Chapter I). This resulted in a detailed study being undertaken of all Faculties. Each member of the Committee was assigned two Faculties and was asked to produce a draft analysis of the organization, role, programs, opportunities and problems which existed in those Faculties. Each Faculty was given the opportunity to respond to the draft section relating to it and each Dean was invited to discuss his/her section with members of the Committee. The priorities arising out of these detailed discussions appear in Chapter III.

In the process of discussing individual Faculty plans, a number of issues emerged which the Committee felt were relevant to the institution as a whole. These are included in a separate chapter (Chapter IV).

Finally, it was felt that the Report would be incomplete if it did not direct more specific thoughts to the future. The Committee hopes that the final chapter (Chapter V) will provide a sense of direction for this University in the years ahead.

Many people are of the opinion that the act of establishing a Committee of this sort and, indeed, the deliberative process which engages it, may of itself be sufficient justification for the hours spent. It has been noted that significant changes recently have been initiated by certain Faculties and other units and, while the Committee is hesitant to claim credit for these changes, the fact that they closely coincide with certain of the recommendations offered in this Report is satisfying. The Report itself may not in the long run be as important as the fact that the review took place. The Committee is optimistic that the recommendations contained in its Report will be considered carefully by the appropriate bodies and that they will see fit to implement them.

Readers will note that we title the Report "The Shrinking Maze". The significance of the title is that the maze is felt to be an appropriate symbol for all Canadian universities in these times. A maze is something that can be negotiated; it is not a series of dead ends. On the other hand, finding a way through a maze requires patience and ingenuity. The route for this University may not be easy, and sometimes the walls will appear to be closing in, making progress ever more difficult. Also, additional mazes may well unfold as time passes. But universities dare not be deterred from their struggle to find the exit if they are to reach the opportunities and achievements that lie beyond.

No doubt members of the Committee anticipated that they would be asked to give a good deal of their time to this task when they agreed to serve. It is unlikely, however, that they expected to meet on over forty occasions, usually for half a day or longer. Each person did yeoman's service and deserves recognition by his or her colleagues for this contribution to the University.

Special thanks are due to Joan Nicholson, who acted as Executive Secretary to the Committee. Her willing assistance in expediting the Committee's work and in typing successive versions of the text of this Report was greatly appreciated.

While the reader will no doubt detect the fine hand of different authors in certain sections, this final document is in all respects a Committee Report. The Committee hopes it will generate discussion within the University community and beyond, and that, following serious consideration of the recommendations in the various forums of the University, appropriate action will ensue.

October, 1980
Calgary, Alberta

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CHAPTER I

THE UNIVERSITY IN CONTEXT

Universities in Canada: New Rules for an Old Game

As this Report is being written, Canadians are busily engaged once again in constitutional talks. At issue is the division of power between the Federal and Provincial Governments. The power to obtain revenue and the obligation to support specific programs will, no doubt, occupy the minds of the negotiators for some time. Education will have to be a major consideration.

While it is dangerous to offer a prediction in such uncertain times, it seems unlikely that universities will be a major topic of discussion. Governments in Canada have not felt compelled to close universities nor to suppress views of teachers and students, a practice common in other countries when major political changes have been made or contemplated. On the other hand, Canada's universities have not been the subject of detailed discussion in constitutional talks. In typical Canadian fashion, they have been ignored.

This follows a long-standing Canadian tradition. In framing the British North America Act, Canadian politicians seem to have paid little attention to the role of universities in the legislation concerning education. It appears that the subject was raised briefly in 1865, outside the formal discussions at Charlottetown and Quebec, but when education was debated in a more detailed way in 1866 at the London Conference, universities do not appear to have been mentioned at all. There are no records to indicate how the debate proceeded prior to the final draft which placed the powers concerning education "in and for the provinces".

In all fairness, we should remind ourselves of the fact that Canada's universities in 1867 were far different from the institutions we know today. There were seventeen universities at that time, only five of which had as many as a hundred students. It appears as if the grand total of registrants across them all numbered about 1,400. The majority of graduates were in medicine and other professional fields. There was no formal research being carried out, nor was there any formal graduate study. The best study to date on this subject is an unpublished paper prepared by Miss Denise Michaud for the Association of Universities and Colleges of Canada in which she identifies some of the actors in the drama and shows that George Brown and others did put forward arguments that universities deserved a more national mandate and should not merely be included with primary and secondary schools.

It is quite likely that Canada's universities will suffer the same benign neglect during the current round of talks as characterized the original constitutional deliberations. This says something about our nation and our politicians as well as our universities. The most charitable view could be one that rejoices in the fact that universities have neither become, nor remained, under the direct control of any particular political or other agency. Many of our universities were founded by churches, yet few, if any, would complain today about church domination. Similarly, other groups, be they alumni, civic leaders or philanthropists, have supported universities, but in the long run seem not to have dominated them nor to have stifled them.

The most significant items of debate have centered on the issue of support and/or control by the Federal and Provincial Governments. During the first decades of this century there seems to have been little or no discussion concerning jurisdiction. Universities struggled on with little public fuss. The major research thrust and rapid student population explosion of the 1950's and 1960's saw a massive level of Federal support being set in place, including the expansion of some, and the creation of other, granting councils to support research, libraries and the like. These were viewed as national concerns and received a national response. It now appears, given a different cost-sharing structure, as if the provinces, having been assured an intermediate or, as some might argue, a direct role in university financing, are interested in developing a rationale for support of universities, or the lack of it, in terms which can be justified politically within a province. Manpower needs, system-wide planning, service to all people within a province etc., now are the slogans used by some governments to justify managing the universities in a province.

While most universities support the premise that they must be of service to the society in which they function, and are not at all offended if their graduates are employable, we must register a strong warning against universities being under the control of any particular body or agency, no matter how generous or how placid. We include all potential and actual agencies, be they Federal and Provincial Governments, church or state, labor or management, even alumni and, we would venture to include, faculty and students. This does not suggest that universities should be subject to no one nor that they are above being accountable. It does suggest, however, that any one group cannot be possessed of all the wisdom required to enable the venerable institution we call a university to rise above the immediate and fix its eye, if only for an occasional glimpse, upon the timeless and the enduring.

As Larkin Kerwin has stated so eloquently,

> The University represents not only one line of attack on the pragmatic problems of contemporary society, but also a little glimpse of the utopia which we envisage, a little preview of some elements of the better world we are

> fashioning. The university has this essential dimension which pierces out beyond the local, the regional, the national.
> (Memo to AUCC university presidents, February, 1980.)

Universities must therefore never lose sight of the universal significance of their mission and their responsibility in striving to meet it. Having said that, however, we would stress the word responsibility, for we would not claim that we are above or beyond accountability. Further, we must insist that primary accountability has to do with the time-honored pursuit of truth and excellence. In that pursuit, nothing short of the best is to be condoned, merely tolerated for a time, in the hope that better things can be achieved 'ere long. We are convinced that universities too arrogant to face such a challenge will inevitably pass away, or be ignored, which amounts to the same thing. On the other hand, universities tied too closely to local and regional needs, will be, or have become, something decidedly less than that for which their name should stand, and they too have already passed away. The history of the world gives ample evidence of nations attempting to control the minds and thoughts of people, often largely within the universities. We must argue that freedom of thought and investigation is something which simply must be beyond negotiation.

Whatever the outcome of the current constitutional talks, the only hope for Canadian universities is a balance of accountability and "arm's length" freedom to fail or succeed within responsible fiscal limits. A swing too far in either direction will lead to irresponsibility or repression, both unacceptable to universities and, we hope, unacceptable to the people of Canada.

Recommendation I.1

That the universities of Canada assert the basic requirement that they be recognized as both autonomous and accountable in the political structures within which they function.

* * *

The Alberta Context

While we have taken a strong position above concerning the unacceptability of having any political jurisdiction manage the affairs of a university, we readily admit that accountability and responsibility suggest genuine involvement with the society in which a university operates. We wish, therefore, to examine the Alberta context in greater detail, reserving for the moment further discussion of the national and international mandate of The University of Calgary.

Objectives

The people of Alberta are faced with an immediate future which almost defies comprehension. In the short run, Alberta's abundance of natural resources and its strong traditional agricultural base guarantee a period of economic prosperity and population growth quite out of proportion to other parts of Canada, and almost unparalleled in the world.

Within such a setting there is a clear obligation to manage growth and development in a responsible manner. The Government of Alberta has identified goals which, if reached, would go a long way toward such responsible development. This may create, at least in the short term, an imbalance in the Canadian education scene. As research and development grow in Alberta and other opportunities develop, the

Province will become a centre of increased academic activity. Inevitably, there will be a flow of academics and support services to this Province. The opportunity available to The University of Calgary to exert national leadership in this context is not to be taken lightly. We will be playing a role which has national significance whether we like it or not. We have already stated our determination to be more than just a tool for any government striving to meet its own objectives. On the other hand, as a responsible corporate citizen in this Province, The University of Calgary has made a strong commitment to shouldering its responsibilities in assisting the people of Alberta and Canada to strive for a fuller and more satisfying life.

Need for Highly Qualified Manpower

If Alberta is to manage the unprecedented growth and development now recognized as inevitable, serious attention must be paid to the question of available manpower, especially highly skilled professionals. It is our hope that, while many professionals will no doubt move to Alberta, or be imported for specific projects, one of our primary objectives will be to provide opportunities for Albertans themselves to be the major participants in the task of attaining Alberta's goals. Much of our development will be based on frontier research as well as on the need to have a sufficient number of well qualified individuals to fill the necessary positions in many fields. When one considers the trends in Canadian Ph.D. enrolment in many areas, especially the sciences, during the past five years, it cannot be stressed too strongly that the immediate prospects are bleak indeed. It will not be possible to carry out the developments begun and projected in this Province and indeed in Canada, without a massive reversal of the recent trend (see Tables 1 and 2). The universities in

TABLE 1

FULL-TIME Ph.D. ENROLMENT IN CANADA BY SPECIALIZATION SELECTED YEARS

SPECIALIZATION	1970-71	1973-74	1976-77	1977-78	1978-79
Agricultural and Biological Sciences	1 089	933	981	974	952
Education	580	659	748	759	834
Engineering and Applied Sciences	1 250	1 047	978	950	885
Fine and Applied Arts	45	57	65	79	80
Health Professions	728	470	474	506	591
Humanities	1 871	1 933	1 989	1 943	1 825
Mathematics and Physical Sciences	2 522	1 910	1 743	1 670	1 586
Social Sciences	2 005	2 286	2 700	2 750	2 746
Specialization not Reported	51	47	35	50	44
TOTAL	10 141	9 342	9 713	9 681	9 543

TABLE 2

Ph.D. DEGREES GRANTED IN CANADA BY SPECIALIZATION SELECTED YEARS

SPECIALIZATION	1970-71	1974	1977	1978	1979[1]
Agricultural and Biological Sciences	276	247	228	239	245
Education	77	128	173	157	145
Engineering and Applied Sciences	225	301	203	224	240
Fine and Applied Arts	6	4	11	7	10
Health Professions	102	153	105	125	135
Humanities	182	264	256	259	270
Mathematics and Physical Sciences	528	474	369	385	395
Social Sciences	229	325	357	423	435
TOTAL	1 625	1 896	1 702	1 819	1 875

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[1] Estimated.

SOURCE: Statistics Canada Publications.

this Province must make the provision of high-level education and training for the people of Alberta a major priority for the next decade. We feel that the universities have attempted to meet this challenge and we do not apologize for past efforts. It is worth noting that in many Faculties in Alberta universities, current enrolment has reached capacity and additional places would be difficult to provide with existing resources. We therefore urge that both government and members of the public take cognizance of the reality of this situation and of the implications of not recognizing the severity of the problem.

The University's Research Mandate

If the development of Alberta is to be based in part on state of the art knowledge and technology, it is essential that the research efforts of our universities continue to expand. We recognize that research can be carried out in many and varied settings. The universities claim no monopoly on research. On the other hand, no institutions have a more specific mandate for research, nor longer proven records, than the universities. We see an increase in university cooperation with government, industry and the private sector as a trend well worth encouraging.

The current interest in research parks associated with universities must be translated into action in the very near future if we are to gain and maintain the momentum necessary to accomplish the goals for which this exciting development is intended. With the growth of research parks, serving the industrial sector, three opportunities will present themselves. The first is to increase the level and breadth of basic research in the universities, a base on which the scientists in industry can draw as close links are forged between the universities and the research parks. The second will be the increased development of applied and contract research done in collaboration with industry as well as with government. The third is participation of scientists in industry and government, and their laboratories, in the training of advanced students. The interplay of the intellectual strength of the industrial research sector with the university can be used to enhance the quality of graduates and to increase the number available to meet the manpower shortfall of the 1990's.

The establishment by the Government of Alberta of the Alberta Heritage Foundation for Medical Research with an endowment of 300 million dollars, is a dramatic illustration of the people in this Province making a major commitment to research. We look forward to further developments in other fields in the near future. With every new research thrust, however, the manpower needs alluded to above become more acute.

While it might be utopian to expect any government to spell out a comprehensive and all-embracing research policy, we continue to urge the development and articulation of long-term aspirations and research strategies so that the necessary lead time and other developmental aspects can be dealt with responsibly. This is dealt with further in Chapter IV, Section 4.

Education for Confidence and for Life

As a third major thrust we urge that the universities accept the challenge of providing the people of Alberta with the opportunity to experience the fullest possible personal growth and development. We will return to this theme in our final chapter. We wish, however, to mention here the crisis in confidence which characterizes so much of life and work. Steven Goldman, a Professor of Humanities at Lehigh University states:

> The crisis urged upon us by the media - pollution, energy scarcity, automation, genetic engineering, and euthanasia - are only the surface expressions of broader problems: loss of freedom and individuality, elimination of privacy, alienation from nature, socialization of life decisions and standardization of behaviour.

We simply cannot continue to expect young scholars to devote a lifetime to teaching and research if the best that can be offered is frustration, lack of confidence and futility. No frontier research can thrive in such an environment.

The Universities Coordinating Council, in the Fall of 1978, presented a statement to the Government of Alberta which we feel is worth repeating here.

> A population must be created in Alberta in which each person is maximally confident in his or her intellectual, cultural, social and physical attainments. It is that confidence that gives the flexibility, adaptability, and creativity to a society so essential in time of significant and rapid change. It is that confidence which allows the development of ethics, cultural diversity, and individual capabilities, initiative, and enterprise. It is the education for maximal confidence in intellectual, social and physical attainment that is the primary purpose of all university education even when the product is highly skilled, professionally trained manpower. Perhaps it is for this fundamental purpose of university education that the Province of Alberta has the greatest need of its universities.

Realities

It is one thing to set objectives and earnestly strive to meet them, but quite often another to accomplish such heady goals. We feel compelled to discuss some of the sober realities which, quite apart from financial resources, must be faced squarely.

Enrolment Projections

We have noted above that manpower requirements in Alberta are now serious and soon will become immense, and that current trends need to be reversed. We now turn to the grim reality that such a reversal appears to be beyond our reach in the foreseeable future because of the downturn in the numbers of university-age individuals and a continued drop in the participation rate among those who are in the 18-24 age group. No one suggests that university should be confined to people within this age group, but it must be admitted that the bulk of our students traditionally have been drawn from this group. It is essential that we discuss enrolment projections in some detail.

Demographics

A statistical overview of Alberta post-secondary education is provided in Table 3 which shows full-time enrolment in Alberta post-secondary institutions since 1967. The Table also shows the participation rate in each of the three sectors: the universities, the public colleges and the technical institutes. Full-time university enrolment in Alberta peaked in 1976, even though university participation rates have been falling throughout this decade and now have dropped even below 1967 levels.

One might assume that the decline in the participation rate at the university level is a result of growth in the public colleges and technical institutes. The data do not suggest such a simple conclusion. In fact, full-time enrolment in the public colleges has declined during the last three years. The participation rate for the total system declined from a peak of 20.5% in 1970 to 17.0% in 1979. However, during the 1970's the Alberta post-secondary system grew in absolute numbers reflecting a growth in the

TABLE 3

FULL-TIME ENROLMENTS IN ALBERTA POST-SECONDARY INSTITUTIONS SELECTED YEARS

INSTITUTION	1967	1970	1972	1976	1978	1979
UNIVERSITIES						
Athabasca University	-	-	-	-	82	36
The University of Alberta	13 027	18 337	17 757	20 019	18 764	18 117
The University of Calgary	4 980	9 237	8 780	10 864	10 644	10 738
The University of Lethbridge	638	1 409	1 076	1 483	1 439	1 419
TOTAL UNIVERSITIES	18 645	28 983	27 613	32 366	30 929	30 310
Percent of 18-24 Population	11.7	14.9	13.3	12.3	10.8	10.2
PUBLIC COLLEGES						
Fairview College	122	131	90	283	371	394
Grande Prairie Regional College	107	242	309	640	587	508
Grant MacEwan Community College	-	-	999	1 729	1 772	1 803
Keyano College	-	-	-	295	360	432
Lakeland College	147	160	142	389	579	551
Lethbridge Community College	455	843	990	1 213	1 435	1 466
Medicine Hat College	199	410	339	419	558	542
Mount Royal College	1 555	1 728	2 305	2 559	2 621	2 499
Olds College	271	355	462	491	572	638
Red Deer College	225	879	665	1 223	1 209	1 225
TOTAL PUBLIC COLLEGES	3 081	4 748	6 301	9 241	10 064	10 058
Percent of 18-24 Population	1.9	2.4	3.0	3.5	3.5	3.4
TECHNICAL INSTITUTES[1]						
Northern Alberta Institute of Technology	2 619	3 490	4 088	4 497	4 877	4 714
Southern Alberta Institute of Technology	2 154	2 664	3 409	4 408	5 484	5 711
TOTAL TECHNICAL INSTITUTES	4 773	6 154	7 497	8 905	10 361	10 425
Percent of 18-24 Population	3.0	3.2	3.6	3.4	3.6	3.5
TOTAL NON-UNIVERSITY SECTOR	7 854	10 902	13 798	18 146	20 425	20 483
Percent of 18-24 Population	4.9	5.6	6.6	6.9	7.1	6.9
TOTAL SYSTEM	26 499	39 885	41 411	50 512	51 354	50 793
Percent of 18-24 Population	16.6	20.5	19.9	19.3	17.9	17.0

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[1] Excludes apprenticeship programs.

total population of the Province. The participation rate in the non-university sector remained relatively constant while the rate for the university sector steadily declined.

Table 4 provides participation rates for Canada and each of the provinces for the period 1962-1979. It shows that through much of the decade, until quite recently, Alberta participation rates were higher than those for Canada as a whole.

While it is obvious that in-migration will moderate the natural decline in the 18-24 year old population, it is not clear that in-migration will have a similar effect on the post-secondary system, especially the university sector. It is important to note that while 18-24 year olds represent approximately 21% of the total net in-migration in a given year in Alberta, the same cohort represents a relatively insignificant 2.5% of the total Alberta 18-24 year old population. If a majority of those individuals in the 18-24 age group migrating to Alberta represent job seekers rather than potential university students, it is possible that both the level of university enrolment and the participation rate will erode further.

An index of potential university enrolment is the participation rate based on the total number of Grade 12 leavers. Table 5 shows the historical relationship between full-time freshman enrolment in universities and Alberta Grade 12 students in the previous year. Decline in university participation for the Grade 12 group follows much the same pattern as that exhibited by the total full-time university enrolment when compared to the 18-24 year old population. By contrast, the participation rate of Alberta 17 year olds in Grade 12 has remained relatively constant over the last five years at approximately 82%.

A more detailed look at the Grade 12 population suggests that the reason for a potential decline in univer-

TABLE 4

FULL-TIME UNIVERSITY ENROLMENT[1] PARTICIPATION RATES 18-24 YEAR OLD POPULATION SELECTED YEARS

PROVINCE	1962	1968	1970	1976	1978	1979[2]
Newfoundland	4.2	7.7	9.6	8.8	7.9	8.2
Prince Edward Island	7.5	12.4	13.3	10.0	8.6	8.2
Nova Scotia	9.1	13.1	16.1	16.7	15.6	14.9
New Brunswick	8.4	11.8	13.1	11.8	11.2	10.9
Quebec	8.3	8.6	7.9	9.0	9.4	9.4
Ontario	7.0	11.4	13.2	15.4	13.8	13.2
Manitoba	8.8	13.7	14.0	13.7	12.4	11.9
Saskatchewan	8.3	13.2	13.7	12.1	11.0	10.4
Alberta[3]	7.4	13.6	15.2	12.4	10.8	10.2
British Columbia	11.0	13.3	12.3	10.1	9.3	9.4
CANADA	8.0	11.0	11.7	12.3	11.5	11.1

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[1] Excluding non-university level programs at universities and university transfer programs.

[2] Based on Statistics Canada preliminary estimates of enrolment.

[3] Participation rates will differ slightly from those presented in Table 3 due to a minor difference in statistical bases.

SOURCE: Statistics Canada Publications.

sity enrolment is the recent drop in the participation rate of a more select cohort. Table 5 shows the relationship between the total Alberta Grade 12 cohort and the members of that group who qualify for matriculation in Alberta universities. While the percentage of those qualifying for matriculation has remained constant during the last six years, the participation rate of this cohort has declined substantially from 54.9% in 1974 to 39.1% in 1979.

It is difficult to provide a ready analysis of why participation rates seem to have fallen so drastically. One theory might be that alternatives in Alberta's buoyant economy and rapidly expanding work force are so tempting that students are prepared to forego long-term benefits in favour of immediate and attractive employment. Similarly, one might expect that vocational and technical programs are expanding. We feel that such answers are too simplistic. Participation rates are falling in Canada generally. We are inclined to conclude that the rate during the late 60's was an aberration and that it is unlikely that we will return to such a high level unless a drastic change takes place. Obviously we are in no position to predict such a change. We do, however, continue to hear disturbing stories concerning the counselling which prospective students receive. Perhaps we also need to reassess the effectiveness of the manner in which we depict the true nature and value of higher education. In spite of evidence to the contrary, it is unfortunate that members of the public, including some prospective students, are still under the impression that university graduates are unable to get jobs. It will always be the case that some graduates are not able to obtain jobs in certain localities or in specific areas of interest, but the current situation, alluded to above, clearly shows that severe shortfalls will be experienced in many areas, primarily those areas of research and technical development so important to Alberta at this time. We would, therefore, underscore the very real likelihood that soon we will be facing an acute shortage of graduates.

Projections

Notwithstanding the above, conventional wisdom suggests that projections of full-time student enrolment ought to be based on known demographics and participation rates held at current levels. Figure 1 shows five variations of that methodology. Projection 2 assumes the con-

TABLE 5

FULL-TIME FRESHMEN
ALBERTA UNIVERSITIES PARTICIPATION RATES
BASED ON ALBERTA GRADE 12

YEAR	TOTAL FRESHMEN[1]	TOTAL ALBERTA GRADE 12 (PREVIOUS YEAR)	FRESHMEN AS A PERCENT OF TOTAL GRADE 12	MATRICULANTS AS A PERCENT OF TOTAL GRADE 12	FRESHMEN AS A PERCENT OF GRADE 12 MATRICULANTS
1970	5 987	27 138	22.1	-	-
1971	5 445	28 793	18.9	-	-
1972	4 909	30 009	16.4	-	-
1973	5 535	29 599	18.7	37.7	49.5
1974	5 719	29 676	19.3	35.1	54.9
1975	6 034	29 438	20.5	39.0	52.6
1976	5 222	30 920	16.9	37.2	45.4
1977	4 779	31 029	15.4	38.4	40.1
1978	4 640	31 681	14.6	36.9	39.7
1979	4 606	32 124	14.3	36.7	39.1

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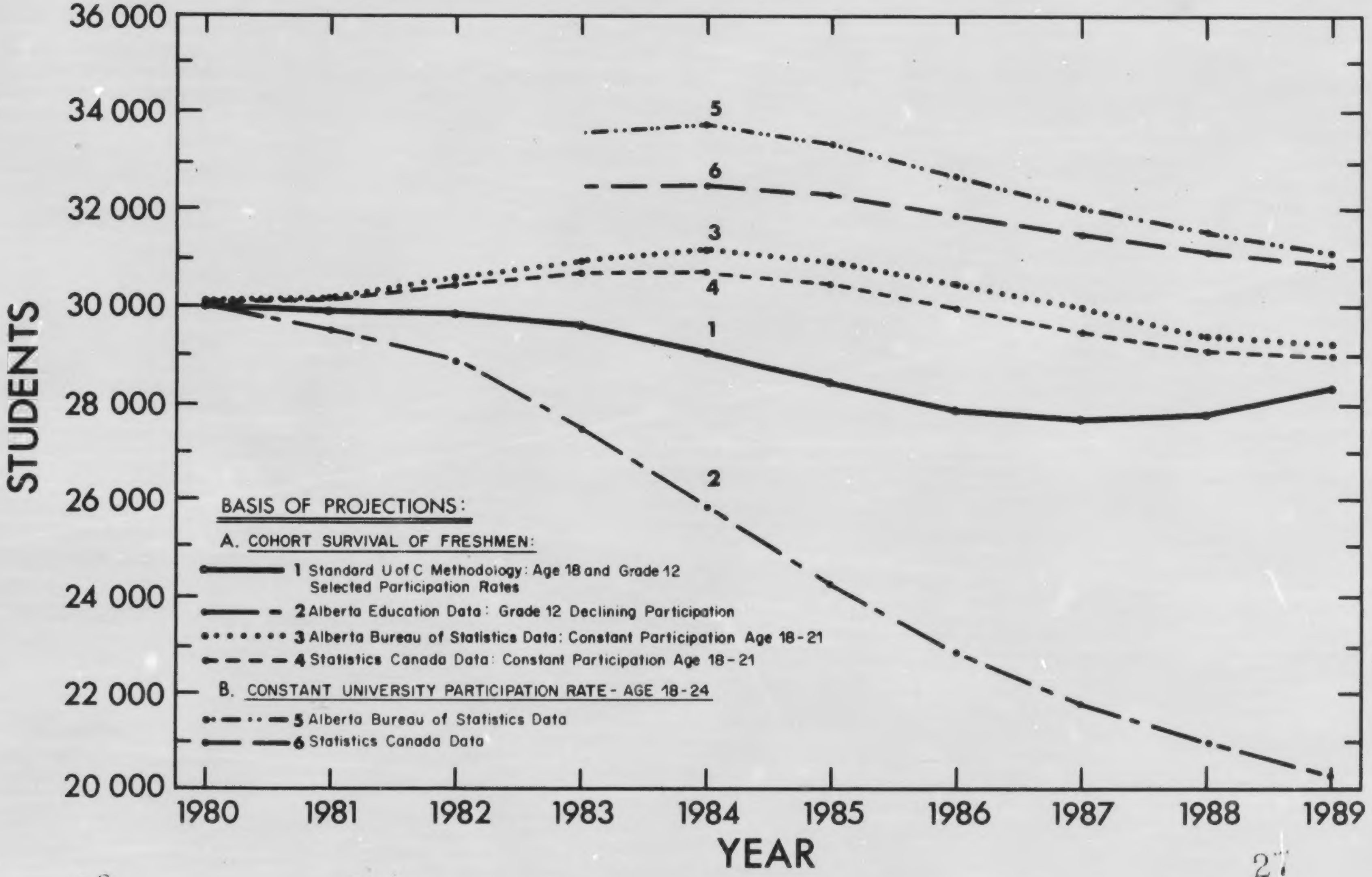
[1] Freshmen are defined as first-year undergraduate students who have not previously attended any post-secondary institution.

tinuation of the downward trend in participation rates shown in Table 5 and hence results in a lower projection. The University of Calgary planning process assumes projection 1 as the most likely and hence our planning is based on the premise that overall enrolment in the 80's at the University will be in the range attained in the 70's. Updated projections for the University are contained in the yearly appendices to The University of Calgary Development Plan, 1976-85.

The share of Alberta university students at The University of Calgary will continue to follow the long term

FIGURE 1

PROJECTED FULL-TIME ENROLMENT, ALBERTA UNIVERSITIES



trend. Currently, nearly 36% of the full-time students studying in Alberta attend The University of Calgary. This is up from 32% in the early 70's. Similarly, the long term trend in numbers of full-time female students is increasing. Relative to their male colleagues female students at The University of Calgary made up 36% of the student population a decade ago and now account for 44% of the total.

Quotas

While on the subject of numbers, it is appropriate that we discuss quotas which have of necessity been imposed on certain programs. For a number of years it has been taken for granted that not all qualified students will be granted admission to all programs. Medicine and Law are classic examples. In more recent years, Faculties such as Engineering, Nursing, Social Welfare, and Management have seen limits imposed. Enrolment could be increased substantially if these limits did not exist.

While some people might assume that one reason for quotas has to do with not glutting the market by graduating more students than can be expected to find employment, a legitimate reason is related to the resources available to a university. Without adequate numbers of faculty members and proper space for teaching and learning, it is counterproductive to continue to add students to the detriment of all.

The time-frame required to "tool up" for an adequate program is simply too long for universities to respond as quickly as some people would wish to the radical swings in student interest. In many cases, it is possible to provide makeshift and temporary responses, but long-range planning is difficult indeed. Since it is a necessary exercise, albeit a difficult one, the Committee has taken its task seriously.

Recruiting

It is appropriate that in the light of the realities facing Canadian universities some reference be made to the likelihood that severe competition for good students will be experienced. Universities in jurisdictions in which finances are enrolment-driven might be expected to exert pressure on students from across Canada to attend, in order that the universities may fend off further financial disaster. Alberta high school students are, therefore, a target for recruiters from elsewhere. It is difficult to argue against such a practice since we regard it as healthy for students to experience education and life in other parts of the country. We will have no alternative but to draw more attention to some of our high-quality programs and begin to offer more scholarships, heretofore seriously lacking in Alberta, to assure Alberta residents that they will have at home opportunities at least as attractive as elsewhere. In the process, we hope people in other parts of Canada realize that we are also prepared to help their students to benefit from experience in another province.

Resources

It is difficult to discuss resources available in Alberta without being misinterpreted or being accused of arrogance. The view apparently held outside this Province is that untold money exists in Alberta and that it is readily accessible to the universities. We admit that the Alberta Heritage Savings and Trust Fund is significant. However, it is important to realize that, although the Heritage Fund provides opportunities for the growth and development of the Province, its resources are far from limitless.

With these resources comes the obligation not to destroy the national balance which has evolved over the years, during most of which Alberta has been a "have not" province, but to attempt to manage responsibly the inevitable process of change. One illustration which comes to mind concerns the spending guidelines for the public sector in Canada. In February 1978 the Canadian First Ministers agreed on two basic principles:

1. that the trend of government expenditure growth should be held on average to less than the trend growth in the value of the Gross National Product or Provincial Gross Product; and
2. that the level of total compensation paid to public employees should not lead the private sector.

By honoring this agreement, Alberta demonstrates its commitment to preservation of the national balance alluded to above, but at the same time passes up a golden opportunity to recruit some of the very finest national and international scholars. This provides us with nothing short of a dilemma. There is so much we could undertake, yet to do so would inevitably weaken promising programs elsewhere.

Similarly, whenever cuts are proposed in federally-supported programs, such as: reduction in services by Statistics Canada, decrease in the availability of Government documents for research, cuts in support for intercollegiate athletic programs, etc., Alberta institutions are faced with a dilemma in that theoretically it is possible to make up the difference provincially. Alternatively, they could exercise restraint and accept reductions along with universities in other provinces.

History has brought a new dimension to the classic Tragedy of the Commons. While it appears as if all the herdsmen must face the inevitable and carefully restrict the number of cattle they are grazing, Albertans do have another option. A strategy was actually put forward, perhaps tongue in cheek, by a former Cabinet Minister who insisted that an

Alberta solution would be to dig up a corner of the pasture, sell the gravel, and purchase more feed and thereby make it possible to graze additional cattle! We therefore must wrestle with the temptation to do just that, and in so doing, develop the very finest institutions which money can buy. Must we wait still longer in Alberta to develop excellence or should we forge ahead during the limited years during which our resources provide us with such an option?

The remainder of this Report will be devoted to a discussion of priorities which The University of Calgary feels can and must be met if it is to remain strong and achieve a higher degree of excellence. For the moment, we wish to state that it is our conviction that Alberta must unabashedly take up the challenge to shoulder what can only be called national responsibilities. All Canadians must be made aware that for generations institutions in central Canada have had the resources, the determination and the population to take a leadership role in developing excellence in teaching and research. Those of us in Alberta have watched with envy and admiration as major developments took place elsewhere. Such achievements are not to be underestimated. Nevertheless, we are convinced that both the opportunity and the responsibility for achieving national centres of excellence have fallen to Alberta.

Recommendation I.2

That universities in Alberta articulate clearly that the commitment of our drive for excellence is intended to contribute to national goals and to the well being of all Canadians.

* * *

Opportunities

In the preceding sections we have attempted to identify the major objectives which the people of Alberta will be called upon to meet. We have also alluded to the demographic realities facing us. Given these objectives and realities, we have mentioned briefly the unparalleled resources currently present in Alberta. We turn now to three specific items which we feel are of such magnitude that they can be discussed appropriately only in the context of the Alberta Heritage Savings and Trust Fund. Without entering into a discussion of specific programs or institutions, we suggest that the infusion of significant funds into the following areas would enable Alberta's universities to meet the challenges described above.

Libraries

Alberta universities were encouraged during 1978-79 by the announcement that nine million dollars had been allocated from the Alberta Heritage Savings and Trust Fund for library enrichment in colleges and universities over the next three years. The Government is to be commended for this dramatic and enlightened move. This appropriation has provided more than temporary relief during a time of high inflation and a depressed Canadian dollar. It must be recognized, however, that if it is to be our goal to develop library collections and services which are of national significance, a more long-term commitment is called for. We do not feel it presumptuous to suggest that an amount of fifty million dollars be set aside, the interest on which could be used for an orderly and well planned development of library resources for research and teaching in the universities of Alberta. We accept the challenge of providing a plan for development and of being fully accountable for the use of these funds.

The experience gained during the initial three-year program currently in place will be of great value in demonstrating the worth of the program suggested.

Recommendation I.3

That the Government of Alberta establish a permanent university library endowment fund in the amount of fifty million dollars to enable the universities to plan continued development of collections and services of national significance.

* * *

Research Equipment

Precisely the same arguments offered in connection with library needs can be made for a major allocation for research equipment. Since most equipment must be imported, the buying power at our disposal has been eroded to a serious extent during the past few years.

It is one thing to make do with aging equipment when one works only with beginning students in introductory courses, even though it is recognized that this is far from satisfactory. It is, however, quite another thing to pretend that frontier research can be conducted in a meaningful way with equipment which is not state of the art.

Premier Lougheed, in announcing the establishment of the Alberta Heritage Foundation for Medical Research, stated that it was his hope that Alberta will become the brain and research centre of Canada. This daring statement leads inevitably to a consideration of mechanisms which can turn such a dream into reality. In addition to the collection of superb research teams, some no doubt imported from elsewhere, it is mandatory that basic research in a wide range of fields be encouraged. At the moment, the upgrading of research equipment has become a priority on a par with library needs. This matter is referred to also in Chapter IV, Section 6.

Recommendation I.4

That the Government of Alberta establish a permanent university research equipment endowment fund in the amount of fifty million dollars to enable universities to maintain the research equipment required to fulfill their research mandate.

* * *

Scholarships

Amid the stupendous developments described here, we feel compelled to draw attention once more to the lack of incentives for young Albertans to remain in this Province. Unlike universities in other jurisdictions, Alberta's universities have offered only limited scholarships to excellent students to encourage them to study here. While we are sympathetic to programs which encourage students to live and study in various parts of the country, we urge that competitive opportunities also be made available here. In recognition of the 75th Anniversary of the Province in 1980, we urge the Government to establish a Scholarship Program to provide incentive to Albertans to study in Alberta.

Recommendation I.5

That the Government of Alberta establish a 75th Anniversary Heritage Scholarship Endowment in the amount of one hundred million dollars to encourage young Albertans to study in Alberta.
(See footnote page 25.)*

* * *

The prospects for The University of Calgary at this time in Alberta's history are bright. If, however, we are not prepared to take the initiative in planning our own destiny, we must not complain if others do it for us. The Committee hopes that by identifying in the Chapters which follow some of the problems and priorities facing The University of Calgary at the present time, the University community - academic and support staff, students and governing bodies alike - will be encouraged to work together not only to solve present problems but to engage in intelligent, rational planning for the years ahead. Such forward planning will be imperative if we are to meet our obligations to present and future students and to the society which we serve.

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[*] Since this recommendation was written, the University has noted with pleasure the Government of Alberta's recent announcement to appropriate from the Heritage Savings Trust Fund an amount of $100-million to establish a scholarship and awards program.

CHAPTER II

THE UNIVERSITY OF CALGARY: PLANNING AND MANAGEMENT

Academic Planning

In June, 1972, General Faculties Council approved the first Academic Plan for The University of Calgary, to cover the period 1972-76. This Plan was forwarded to the Department of Advanced Education in October of that year, as part of a response to the Report of the Worth Commission on Educational Planning.

In January, 1975, the Department asked The University of Calgary to consider a document entitled Guidelines for Development at The University of Calgary - A Proposal, which requested "that The University of Calgary, in co-operation with the Department of Advanced Education, undertake a review of programs and plans which provide targets for growth and expansion for the year 1985". This document acknowledged that "academic planning at The University of Calgary has had a considerable impact on the institution's development", and the Government's request that the University review its programs and plans was set in the context of the Academic Plan (1972-76). The individual and joint roles and responsibilities of the institution and the Department were clearly recognized in this request:

- "An institution, with the collaboration of the Department, has the responsibility of establishing a development plan and planning targets."
- "The Department must take responsibility for ratifying such targets and for ensuring that sufficient program variety and capacity be available in the interest of the Province."

The Board of Governors referred the document to GFC, who assigned to its Policy and Planning Committee the responsibility for the development of a detailed response. A review of the Academic Plan (1972-76) was initiated by providing Deans and Senior Budget Officers with the appropriate historical data and projected growth patterns, and responses where sought from them in terms of academic planning at the Faculty level.

This process led to the Development Plan, 1976-1985, which was approved by GFC in November, 1976, and by the Board of Governors in January, 1977. This document was transmitted to the Department of Advanced Education and Manpower as the formal planning statement of The University of Calgary. It claims to be "a framework within which the more specific objectives of the Faculties may be assessed, alternatives considered, and the resulting plan developed". It also recognizes that "most of the policies and planning proposals contained in the 1972 document have been implemented, either by way of specific additions or changes to activities, or by way of day-to-day operational decisions which continue to be guided by the policies".

The Development Plan, 1976-1985 was envisaged as the first phase of a two-phase planning process:

> Faculties and Major Budget Units will be requested to develop more elaborate statements of the unit's role, objectives and specific activities planned for the next several years. Academic considerations and decisions will be imperative to guide orderly physical planning and development and to determine each Faculty's maximum size. These more detailed statements, with the addition of proposed time-lines and resource-requirement estimates, will constitute the plans that will be developed.

In May, 1977, the Vice-President (Academic) provided a framework document for the development of Faculty/Support Unit plans. It was implied that for Faculties with a departmental structure the development of departmental plans might have to be a necessary intermediate step. These Faculty plans were to "provide a process for the determination of academic priorities and consequently the use and allocation of resources in support of priorities". The plans were to be developed in the context of the Development Plan, 1976-85 which sets out the general goals of The University of Calgary, and includes a role statement, both of which are re-stated here.

General Goals of The University of Calgary

In fulfilling its role there arise a series of goals which are stated below to give the public a clear statement of what the University stands for and what can be expected of it. While the University's main responsibility is to the needs of its immediate community, it also has important provincial, national and international responsibilities.

The University of Calgary:

(1) will contribute to the growth and to the critical scrutiny of knowledge;

(2) will assist people to develop their human potential with particular attention to their intellectual abilities;

(3) will develop an environment conducive both to scholarship and to the rational use of leisure;

(4) will give service and intellectual leadership to society;

(5) will provide a forum for the critical discussion of issues.

The Role of The University of Calgary

A number of functions and missions are implied by the University's responsibility to acquire and disseminate knowledge and to contribute to society through research and public service.

In initiating and maintaining programs in the fundamental disciplines and the professions, the University is committed to high intellectual standards in its undergraduate programs, to preparing students for advanced study, and to developing a strong Faculty of Graduate Studies.

Faculties have been established to provide a variety of curricula related to the professions, and to initiate and to foster programs and activities related to general and interdisciplinary studies, to personal development, and to the achievement of an enhanced cultural, aesthetic, and humanistically oriented awareness. The provision of formal programs in continuing education and of a variety of other cultural opportunities is among the essential means by which the University meets it obligations to the local and regional community.

The University encourages and engages in a range of research activities -- some of which are motivated by intellectual curiosity and the desire to increase knowledge, and other research which is turned towards solving specific problems. In the latter, the research is often carried out through contracts with government or other agencies. Some research is pursued at the frontiers of knowledge, and involves experiment, observation and search. Other forms of research - sometimes referred to as scholarship or reflective activity - are vital to good teaching and involve the study, synopsis, integration and evaluation and publication of what is known, which may in turn indicate new fields for investigation.

Recommendation II.1

That the Development Plan, 1976-1985, be confirmed as the guideline document which outlines the role, general goals and objectives of The University of Calgary for the 1980's, and that the Policy and Planning Committee (or its successor, see Chapter V) continue to up-date the Appendices on an annual basis.

* * *

The planning context also included trends and expectations in student enrolment for the planning period. The University of Calgary peak enrolment of 10,950 full-time students had occurred in the Fall of 1975, and it was clear that the period of rapid growth which had characterized the preceding years had come to an end, at least for the immediate future. Enrolment projections at the time for 1977 to 1982 were essentially stable (11,040 - 11,200 full-time students); in reality the full-time student enrolment for Fall 1977, 1978 and 1979 were 10,805, 10,644 and 10,738 respectively, slightly below those projections made in 1977. The most recent projections by the Office of Institutional Research at The University of Calgary suggest another few years of growth to approximately 11,500 full-time students by Fall 1983. A few years of modest decline in full-time enrolment should then follow and a subsequent upturn should occur again near the end of the decade.

It is of particular interest to note that in 1975 The University of Calgary was asked by the Department of Advanced Education and Manpower to use 16,500 students as the enrolment planning figure and 4,000,000 gross square feet as the global target for facilities planning. Government grants have not taken into account dislocations in resources needed for instruction and research which occurred when capital and operating grants responded to stable enrolment rather than to the planning targets set by the Department. Grants more in keeping with planning targets would have allowed the evolution of a balanced and integrated institution. Space and facilities growth has been interrupted yet University student and research-related programs continue to evolve to meet rapidly changing circumstances.

In order to adjust the University planning process from the rapid growth period to the "steady state", the following resource assumptions were clearly enunciated by the University.

Resource Assumptions for Faculty/Support Unit Plans (1977):

> While the University will continue to make its case for resources to improve the quality of existing

programs and to develop new programs, Faculties and Support Units should recognize the problems related to slow growth, no growth or decline in student numbers over the next several years. Historically, the operating funds and buildings for universities have been dependent, in some form, on student numbers. There is no evidence to suggest that this relationship will be discontinued if enrolments decline. If total enrolment levels off or drops, the case for extending or even maintaining existing resources and personnel over the next decade may be difficult to win. Across Canada, and Alberta is no exception, the funds for post-secondary education are generally declining as a percentage of total provincial expenditure.

While it is not possible to specify in absolute numbers the funds, FTE positions or space that may be available to each Faculty or Support Unit, there are three general resource assumptions which could be considered as alternatives in formulating plans.

The first assumption is that, over and above fixed costs, there will be funds for new programs which meet public need or which contribute to distinctive and unique academic development of the University. This resource assumption also encompasses opportunities for obtaining additional support for improving quality in existing programs.

The second assumption on resources is that the period of constraint will continue for the next several years and University financing will be in line with the 'going rates' of provincial spending. Under this assumption, priority emphasis would have to be made through policy support and allocation of resources 'at the margin'. New program development would have to depend more heavily on reallocation of existing resources.

The third and most pessimistic of the assumptions on resources is that funding will become more constrained and cut-backs will be necessary, particularly if enrolments decrease. In these circumstances, planning will have to identify future problems and strategies to handle them. If the University moves into a more severely constrained financial position, the focus on priorities will involve considerations of what should be reduced or phased out and what should be retained or improved.

While it is hoped that the University will not encounter increasingly constrained resources as

> implied by the third assumption, and while the University will press for additional required resources as implied by the first assumption, it seems practical to choose the second resource assumption as a basis for planning over the next five years.

Preliminary Assessment of Faculty/Support Unit Plans

The plans submitted by the units were very detailed but still based on the concept of growth which had driven planning in the preceding years. The difficulties of making priority assessments in Departments and Faculties under conditions where certain programs/activities would have to be curtailed or phased out in order to permit the development of new initiatives were very obvious. The Policy and Planning Committee of GFC reviewed these Faculty/Support Unit plans with the respective Deans/Senior Budget Officers during 1977-78, but was unable to recommend on the relative priorities which should be assigned to the support of ongoing academic programs within the base operating budget of the University, or the relative priorities which should be assigned to new programs submitted to the Department of Advanced Education and Manpower for special program development grants.

The Policy and Planning Committee, chaired by the Vice-President (Academic), is composed of seven ex-officio members, sixteen members elected by GFC (one member from each Faculty), and one member named by each of the Students' Legislative Council, the Graduate Students' Association, the Board of Governors and the Senate. This membership makes it one of the most representative bodies in the University, which is a valuable feature for some of its activities, e.g. the review of new program proposals, the assessment of space factors for planning purposes, etc.. At the same time, its large size, twenty-seven members in all, makes it an unwieldy body which has considerable difficulty in attempting to fulfill its stated terms of reference. This matter is followed up in Chapter V.

While the difficulties in dealing with detailed Faculty/Support Unit plans provided the major impetus for the formation of the University Program Review Committee, the planning documents themselves have already been valuable in two ways. First, in their updated form, they provided an important starting point for the University Program Review Committee. Second, they required that a formal planning process be initiated in Faculties (and in Departments in the departmentalized Faculties), leading to an articulation of goals and objectives and a specification of means to achieve them. The nature of the University demands that this process be effective and ongoing at the grass-roots level, in the context of a general framework which has been specified at the institutional level, and on an operational scale which is realistic relative to resources available, societal need, and actual/potential student enrolment.

> Recommendation II.2
>
> *That Departments and Faculties develop and maintain rolling five-year academic plans which are up-dated on an annual basis, in the context of the Development Plan, 1976-1985, the recommendations of the University Program Review Committee (as approved by the appropriate bodies), and such other institutional decisions as may be made from time to time.*

* * *

Many units have already achieved a significant number of the goals identified in these plans, especially where priorities at the unit level were clearly defined. Such detailed planning should be encouraged and regularized, without creating any expectations that "the University" would formally approve the details which are properly in the jurisdiction of Departments/Faculties, it being understood that such planning can only take place within the broader objectives and priorities which the University must set. Academic unit plans are reconsidered each year on the basis of annual budget allocations and, in turn, form the starting point for the unit program review which ordinarily initiates the budget cycle.

Position Control Policy

Historically the budget control procedures at The University of Calgary, which were developed during a period of rapid growth, were based on fiscal control only at the unit level, with reference to an approved budget. The budgeting process itself did not apply rigorous control over the number of continuing academic positions, and hence, did not control the long-term cost implications arising from progressive advancement in the salary/rank structure and annual inflationary adjustments of salary scales. The accepted philosophy associated vacancies with the units, and required no formal centralized review before they were re-filled. Excluding retirements, about 50 continuing academic staff positions become vacant annually due to resignations, deaths and terminations.

Approximately 80% of the gross annual operating budget of The University of Calgary is devoted to staff salaries and benefits; of this 63% is accounted for by academic staff (E-1) and 37% by support staff (E-2). Except for the restrictions imposed by the "80/20 Guideline" which requires that in academic units where more than 80% of the academic staff is already tenured or on initial term appointments (i.e. tenurable) all further appointments must be 'full-time limited term' appointments, The University of Calgary employs the traditional academic staffing model with long-term commitments. This is dealt with further in Chapter IV, Section 2.

In order to exert a moderating influence on the growth of the total cost of academic salaries/benefits, the Board of Governors, acting on recommendations of GFC and the President, approved an E-1 Position Control Policy in May, 1979. This provides a mechanism for the internal reallocation of resources at a time when the annual inflationary increases in the base operating budget of the University have been less than the overall increases in the cost of maintaining a given level of educational services. The Policy Guidelines are as follows:

1. The total number of regular full-time permanent, full-time limited term, and continuing part-time positions (hereinafter called "continuing positions") in the E-1 Budget (Academic Salaries) will be limited to a maximum established by the Board of Governors.

2. Initially, the maximum number of continuing positions will be as detailed in the 1979-80 Operating Budget.

3. Further growth in the maximum number of continuing positions will be subject to the approval of the Board of Governors, based on such factors as specific program development grants, an increase in total student enrolment, or other academic requirements.

4. Fluctuations in the requirements for continuing positions in individual units, based on changes in workload or other factors, will be dealt with by the internal redistribution of vacancies in continuing positions arising through natural attrition (retirement, resignation, termination, permanent disability, death).

5. All funds released by vacancies in continuing positions arising during the fiscal year will be credited to one central account for which the President will have signing authority.

6. The disposition of continuing positions falling vacant during the fiscal year, and of the funds so released, shall be recommended by the Vice-President (Academic) to a Position Allocation Committee advisory to the President and comprising six members selected by the President, at least three of whom shall be members of of the GFC Budget Committee.

7. In making its recommendations, the Position Allocation Committee will specify the rank deemed appropriate for each position. It is expected that appointments will be made at a junior rank unless the President is satisfied that the academic requirements of the particular unit justify a more senior appointment.

8. The reallocation of the funds described in (5) above for purposes other than new appointments to continuing positions will be for the remainder of the fiscal year only, with such funds not forming a part of the continuing full-year cost calculation. In making such allocations, particular attention will be given to priorities and concerns which have been identified by the University Budget Committee.

9. Reports of positions and funds reallocated by the President will be made to GFC and the Board in September and January, and to the University Budget Committee in conjunction with its preparation of a budget for the following fiscal year.

Since the introduction of this policy, the total number of continuing academic appointments has been held constant at the number in the 1979-80 operating budget (1,052.7 net FTE) with the following exceptions:

(a) the policy is related to the number of FTE continuing academic positions supported by the University operating budget, and appointments or fractional FTE appointments for which funds are recovered from outside agencies, by long-term agreement, are excluded;

(b) continuing academic positions which are provided for in conditional grants for new programs are added to the basic control number;

(c) in response to a recommendation from the President, the Board of Governors recently approved four additional positions, to be held in reserve for those cases where it is deemed to be in the best interest of the University to recruit a Department Head from outside.

The Position Control Policy provides a mechanism for the University, on the authorization of the President, to reallocate positions from one unit to another in order to effect some adjustment in academic staff resources in response to a changing student enrolment "mix", to downgrade vacancies in units with a high proportion of senior staff before they are filled, to upgrade vacancies before they are filled in response to specific academic program requirements, to review and adjust the rank "mix" in a unit, and also to close down positions if necessary. This procedure provides for flexibility in that under-expenditures on continuing academic positions can be used to meet other urgent academic program needs, on the authorization of the President.

Since May, 1979, the following continuing academic positions have been reallocated under this Policy: Communications Media (-2, replaced by support staff); Continuing Education (-1); Education (-4); Engineering (+2); Fine Arts (-3); Humanities (+1); Management (+3); Medicine (+1); Nursing (+1); Science (+2); University College (+1).

The ongoing activities of the Position Allocation Committee have expedited the work of the University Budget Committee, but at the same time also changed it significantly. The continuing academic staff component of the budget units has already been fixed when the Budget Committee considers annual budget allocations early in the calendar year. The work of the Budget Committee must be consistent with the directions set by the Position Allocation Committee. The long term thrust of the Position Allocation Committee must be to move toward the concept of a "complement" of continuing academic staff in each academic unit, since it is most important that it be clearly seen that these decisions are consistent with institutional goals and objectives. It is anticipated that the Report of the University Program Review Committee, and the institutional decisions based on it, will provide important policy guidance for both the Position Allocation Committee and the University Budget Committee.

> Recommendation II.3
>
> *That the University Administration take the necessary steps to ensure that the activities of the Position Allocation Committee and the University Budget Committee are well coordinated and directed toward established institutional goals and objectives.*

* * *

While the Position Allocation Committee has had only a little more than a year to establish itself, and so far has not had the opportunity to see one fiscal year through to completion under the Position Control Policy, some substantial gains have been possible in our approach to academic staff recruitment. In the past, recruitment activities have usually been delayed until there were some indications from the Government as to the operating budget level for the next year and how this might affect internal budgetary allocations as determined by the University Budget Committee. With the Position Control Policy, the Vice-President (Academic) was able in June, 1980, for the first time to advise Deans on a number of authorized positions, especially those arising from late resignations, for which recruitment for July, 1981, should commence. This should have a significant effect on the quality of candidates by ensuring that the University will be able to make appointment offers much earlier than in previous years.

Review of New Program and Other Academic Development Proposals

New program development in the Alberta universities is subject to the Department of Advanced Education Program Coordination Policy which came into effect in January, 1974. This policy is designed "to ensure the availability of effective educational experiences and to avoid unwarranted duplication of effort in institutions". The procedures for new program development at The University of Calgary are outlined in Appendix D of the Development Plan, 1976-1985. Key institutional steps are the submission of a Letter of Intent (approved by PPC), a review of the proposal, and the submission of a formal program proposal (approved by GFC and the Board of Governors). The approval of the Department of Advanced Education and Manpower is required before the Board of Governors can authorize the implementation of a new program. Approval by the Department is a two-step process, 'approval-in-principle', followed by 'final approval', the latter being accompanied by an earmarked conditional grant for a stated number of years to permit implementation of the program without encroachment into the base operating budget supporting ongoing programs. Following the receipt of information on the conditional grant awarded, the Policy and Planning Committee reviews the level of funding and advises the Board of Governors on the feasibility of implementation. On maturity of the program and expiration of the conditional grant, and following a favorable review of the program, the base operating budget of the University is increased by an appropriate amount (normally the final year conditional grant plus an inflationary adjustment) to fund the program on an ongoing basis.

The Program Coordination Policy applies only to new programs, and does not cover program expansion (to accommodate more students) or quality improvements. The latter have been difficult to accommodate in recent years since the inflationary increases to the base operating budget of The University of Calgary have not kept up with cost increases. Furthermore, the total student enrolment has remained approximately constant and now appears to be rising slightly again, leaving no fiscal flexibility for qualitative program improvements or program expansion. For example, the University has not been able to respond to an institutionally approved proposal for an expansion of the Geophysics program or to a proposal to extend the Engineering program by implementing a minor in Computer Engineering, in spite of the demand for graduates and the direct relationship of these programs to the future development of the Province.

Recent draft revisions of the Program Coordination Policy suggest that the policy may be broadened to include proposals for program expansion and program extension, which is strongly supported by this University, although there is no guarantee that the funds available will increase. There is also every indication that the cumbersome program approval procedure employed by the Department will become more complex, which is to be deplored. This can only lead to further delays in reaching decisions on proposals for new programs and expansion and extension of existing programs.

It is highly desirable that there be a greater academic involvement in the coordination of programs offered at the Alberta universities, and the recent efforts of the Universities Coordinating Council in this regard should be encouraged.

Recommendation II.4

That the University give strong support to the Universities Coordinating Council in its efforts to establish itself in an

> *influential advisory role to the Department of Advanced Education and Manpower with respect to new program development and program expansion and extension at the Alberta universities.*

* * *

Figure 2 summarizes new program and other related academic development activities at The University of Calgary for the period 1975-1980. Time lines for all phases of the process are indicated. The only new program implemented in 1980 will be Rehabilitation Studies, and it is funded through the special "Program to Aid Handicapped Individuals" and not through the New Program Development Fund of the Department of Advanced Education and Manpower. Thus it is clear that little progress has been made recently with respect to the approval and implementation of new programs, largely due to the limited funds provided for this purpose.

We have noted above that The University of Calgary has not developed to the full extent envisaged in earlier planning documents, including those emanating from the Department. It is essential that every effort be made to overcome the incomplete nature of some of our programs and support units. To do so will require additional development funds, apparently beyond the scope of existing resources within the Department. We intend to present this case to the Government in the near future. We pursue these notions in Chapter V.

Recommendation II.5

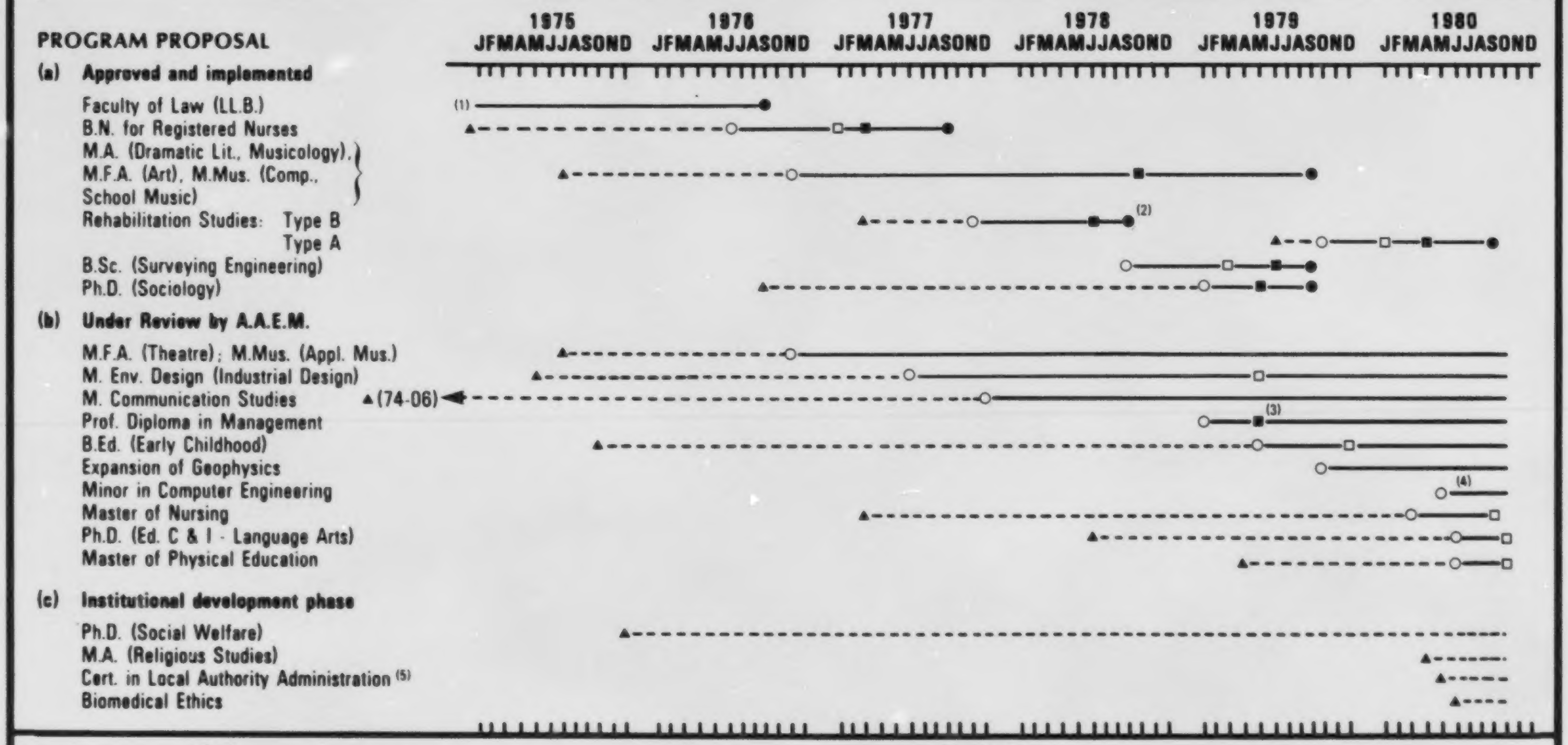
> *That the University request the Government of Alberta to increase program development funds for The University of Calgary to permit it to develop at this crucial stage in the growth of the City of Calgary and the Province to the extent previously envisaged by the Department of Advanced Education and Manpower.*

* * *

FIGURE 2

NEW PROGRAM AND OTHER ACADEMIC DEVELOPMENT PROPOSALS, 1975-80

(Stages as per A.A.E.M. Program Coordination policy, and including all program development activity since Policy introduced effective January 1, 1974)



NOTES

Letter of Intent re Dentistry filed June, 1974; not approved September, 1978.

(1) Proposal submitted February, 1974; final approval granted September, 1974.

(2) Type B program of limited duration, extended to 31 March, 1980.

(3) Implementation held in abeyance pending GFC action on Management Task Force Report; no development grant requested from A.A.E.M.

(4) Under review as Letter of Intent.

(5) Joint with other post-secondary institutions (proposed consortium).

KEY TO SYMBOLS

▲ = Letter of Intent submitted.

○ = Institutionally approved program proposal submitted.

□ = A.A.E.M. Approval-in-principle.

■ = A.A.E.M. Final approval (incl. award of program development grant, if requested)

● = Program implemented.

Internal Reallocation of Resources

The university scene in Canada is characterized by near-stable overall enrolment or declining enrolment, which is frequently accompanied by internal shifts in enrolment from Faculty to Faculty. The response of governments has been generally to hold budgetary increases to institutions at levels below inflationary cost increases, and to expect institutions to adjust internally either by reducing staff commitments or by reassigning positions from one unit to another, or by otherwise effecting economies, or a combination of all of these. In order to maintain their academic vitality, universities have to provide for some regular infusion of new and young academic staff during a time when there are relatively few normal retirements and when natural attrition and special early retirement schemes are opening up only a few positions.

The University of Calgary has responded to these challenges by instituting the Position Control Policy described above. In addition, this University has reallocated financial resources for some years in order to meet pressing program demands. The following actions on our part, we believe, are worthy of special mention.

It is important to understand that the following examples include both "direct" and "indirect" costs. The direct costs ($52 million, 1979-80) correspond to the operating budgets of the Faculties, and include the pension costs of both academic and support staff, but no other staff benefit costs. The indirect costs ($28 million, 1979-80) include, for example, the costs of operating the University Library, Communications Media, and Academic and Administrative Computing Services, as well as the costs of Student Services, Physical Plant, the extension program, all staff fringe benefits other than pension costs, Registrar's Office, Controller's Office, Administrative Systems, central University administration, and Support Services (the last under a break-even policy). Overall, it can be seen that for every $1.00 of direct expenditure a further indirect expenditure of $0.54 is incurred. At the University of Alberta indirect expenditures, estimated on a comparable basis, are about 50% of direct expenditures, reflecting the slight decline which might be expected in a larger institution. This is confirmed by a 66% figure for the University of Lethbridge, a much smaller institution. While it can be argued that a small group of new students in a new program does not necessarily engender incremental indirect costs which are as high as 54% of the direct costs, this concept cannot be extended to the University as a whole; in fact, it should not be used at all. However, the reality of University development and relations with the Department of Advanced Education and Manpower (and its predecessors) is such that adequate support for indirect costs is not always obtained for the development of new programs and Faculties. The result is a subtle encroachment on the funding of the University which eventually manifests itself through a shortage of funds for direct expenditures related to courses and programs.

The Faculty of Medicine was developed through a non-formula (conditional) grant and a component of the formula (base) operating grant. In 1976-77 these grants amounted to $3,360,000 and $2,540,000 respectively. In 1977-78 the conditional grant was added to the base operating grant of the University. The application of the inflation factors which were applied to the base operating grant would inflate the combined 1976-77 grants ($5,900,000) to $7,559,700 in 1979-80. The 1979-80 direct and estimated indirect costs of this Faculty were $8,966,100. Taking tuition fees paid by medical students into account ($470,900), the costs of the medical school in 1979-80 exceeded the development grant plus base grant and fee revenue by more than $900,000. This amount has been obtained by progressive reallocation of funds, in order to develop a strong medical school.

Similarly, the conditional grant for the development of the Faculty of Law, which was added to the base 1979-80 operating budget, has progressively fallen short of the costs of developing a sound law school. The total direct operating expenditure during the last year of the program development grant (1978-79) was $1,140,162 while the conditional grant was $734,000 and fee revenue $90,000. Expenditures for this program in 1978-79 therefore exceeded the development grant by $316,000. Most of this deficiency arose because the University was held to the original unrealistically low inflation factors which were part of the initial proposal, while larger inflation factors were recognized in the base operating grant. This has been fully documented in submissions to the Department of Advanced Education and Manpower. These resources were derived by progressive reallocation from other academic units during the period 1975 to 1978.

The University has accepted its provincial mandate in the area of Social Welfare, and has developed a vigorous satellite program in Edmonton. The additional cost of this decentralized activity has never been adequately recognized in the annual operating grant. In 1979-80, many years after the Edmonton program commenced, a $50,000 adjustment was made to the operating grant. Direct and indirect costs of the Edmonton program in 1979-80 exceeded this amount and tuition fee revenue by $285,000. This level of continuing support for the program has been obtained by internal resource reallocation.

The "public service" activities of the University, including extension activities and radio/TV programming, were funded through a designated grant up to and including 1976-77. In 1977-78 an amount of $399,000 for this purpose was added to the regular operating grant. This would amount to $511,200 in 1979 dollars; however, the 1979-80 public service budget and indirect costs exceeded this figure and anticipated tuition fee revenue by $640,000. Thus, over the years, the University has more than doubled its public service endeavours by reallocation.

In the Faculty of Education over the past few years there has been a substantial decline in both full-time and part-time undergraduate enrolment, although graduate enrolment has remained relatively constant. The teaching workload of the Faculty, measured by weekly student hours of regularly scheduled course instruction, or by course enrolees, declined in 1979-80 some 19% from levels in 1977-78. Over this two-year period the full-time equivalent academic staff in the Faculty was reduced by more than 6%, and a further 4 continuing academic positions were removed during the current year. The cumulative reduction of academic staff, therefore, reflects the recent shift in student interest away from Education.

However, the University recognizes that there is likely to be a shortage of teachers in the near future and that the Faculty of Education must remain in a position to respond to renewed societal demand. The Statistics Canada forecast for Alberta projects steady growth in the 5-11 year old age bracket to the end of this century. It must also be noted that the Faculty of Education is itself redirecting some academic staff resources toward new programs: staff resources will be needed to support the Rehabilitation Studies program which is being implemented in 1980; similarly some current academic staff are required for the B.Ed. (Early Childhood Education); a teacher in-service education program has been mounted; graduate education course offerings are being increased in southern Alberta (M.Ed. in Medicine Hat).

In the Faculty of Management the teaching load has increased some 20% over the three-year period 1976-77 to

1979-80. During this time the number of students in the M.M.S. program rose from 2 full-time and 67 part-time to 16 full-time and 141 part-time, while the full-time equivalent academic staff increased from 49.1 to 55.5, with a further 3 continuing academic positions having been allocated to the Faculty for 1980-81. The trend in full-time equivalent staff positions to Management in recent years has been consistent with the increase in course enrolment. Funding for the M.M.S. program has been a significant problem for the Faculty and the University. This program was implemented with a five-year conditional grant which rose to a maximum of $81,500 in the third year and then declined to $20,000 in the final year of special support (1978-79). The planning objective was to replace the conditional grant progressively with enrolment-driven formula funding based on an appropriate "enrolment unit" weighting for the M.M.S. degree. However, formula funding was subsequently abandoned by the Department cf Advanced Education and Manpower. The base operating budget of the University was, therefore, not properly adjusted to reflect the full ongoing cost of this program; hence, in the fiscal year 1979-80 approximately $400,000 has been obtained for this program by internal reallocation.

The above examples illustrate that The University of Calgary has faced up to the challenges of managing its global budget to meet specific program needs, to respond to changes in the demand pattern, and to assist in the development of some new programs where funds above and beyond the earmarked conditional grants were required (especially through indirect cost contributions). Since the University has been in an overall 'no-growth' situation, the flexibility of the institution to respond to additional initiatives by reallocation of resources from the base operating budget has been virtually eliminated. New initiatives must be based on incremental funds, unless they represent program revisions which replace ongoing activities in Faculties. The University must also ensure that it retains a balance among the disciplines, and that it retains the capability to respond to increased student demand in areas where, for the present, there has been a decline in enrolment.

Recommendation II.6

That the University continue to seek the appropriate level of indirect funding as part of conditional grants for new program development in order to prevent the erosion of ongoing funding for existing programs and services.

* * *

Recommendation II.7

That the University review with the Department of Advanced Education and Manpower the direct and indirect costs of programs in the context of the conditional grants which have been awarded for the establishment of Faculties of Medicine, Law and Social Work, and for the M.B.A. program.

* * *

Recommendation II.8

That the University present its case for an appropriate increase in the base operating budget based on growth in enrolment at The University of Calgary as well as the growth of this University relative to others in the Province.

* * *

Evaluation of Programs and Academic Units

The University of Calgary has established a policy for open evaluation of its programs: commencing with a review of the Faculty of Education in 1975, presidential task forces, involving senior faculty members from other Faculties and disciplinary experts from other institutions, have been employed to review the Faculties of Education, Social Welfare, Fine Arts, Science and Management. A review of University College is now underway. These reports, together with recommendations for action, have been presented to GFC and discussed publicly. Few public institutions can make similar claims.

Deans of Faculties periodically seek the advice of senior academics from other universities on the programs in their Faculties. Several of the professional Faculties are subject to accreditation reviews by their respective professional associations. New program development regularly includes an evaluation phase which is normally completed before the conditional grant expires. The views of students and graduates from new programs are sought in these reviews. The principle of assessment extends to student evaluations of courses. These are conducted regularly in most Faculties.

Recommendation II.9

That the University ensure that the recommendations approved by GFC, arising out of Faculty reviews, are implemented as expeditiously as possible and included in Faculty plans, to the extent that circumstances permit.

* * *

Evaluation of Support Services

Following the establishment of an academic position control policy requiring the ongoing review of all continuing academic positions when they become vacant, The University of Calgary has begun a related Review of Support Services (ROSS) Project. The objective is to identify institutionally-agreed terms of reference for all University service units and to determine the support staff and other resources required by these units to carry out their mandates effectively. A similar review of support services in academic departments will also be conducted. A Steering Committee has been appointed to review comparative data from other institutions and from this University over time, to oversee the review of objectives of service units, and to determine the specific method of review for individual units. Review Teams to evaluate service areas will be formed as required, and a sub-committee will be formed to examine the support staff component of academic departments. The Steering Committee will synthesize the reports from the Review Teams and the sub-committee and recommend support staff 'establishments' and other resource levels to the President. It is anticipated that this will lead to a program review procedure which can be implemented as part of the University's planning and budgeting process.

Quantitative Measures in the Budget Process

Current University of Calgary documents referring to the budget process include statements on the use of quantitative measures as guidelines, as well as statements of the need for judgment and discretion in their use. The policy position was reiterated by both GFC and the Board of Governors in approving the Development Plan, 1976-1985, as follows:

> 13.1 Budget policies will recognize teaching activities as a major factor in the consideration of annual budget allocations to Faculties.
>
> 13.2 The Academic Resource Evaluation Guideline is considered to be a useful aggregation of data concerning the instructional practices of the institution and a proxy for the totality of academic activity that should be used by the University

> Budget Committee as benchmark data along with whatever other data the committee finds useful in making budgetary decisions.

The Academic Resource Evaluation Guideline (AREG) was developed in the early 1970's to assist in the internal resource allocation process. It can be described in general terms by the following extracts from OIR Report No. 110 (October, 1975):

> AREG is an analytical model that estimates the number of academic staff required to support the total academic activity of Faculties based on a quantification of instructional practices and policies of the institution. AREG calculates academic staff for a Faculty in proportion to departmental loads for course related teaching and graduate student supervision. Course related teaching loads are calculated by dividing the number of students enrolled in course sections by average section size and multiplying by the average number of hours per week a section meets to arrive at the number of formal instructional hours taught (section hours). Similarly, graduate student supervisory loads are calculated by multiplying the number of graduate students in each program of study by a factor that reflects the agreed weighting of the supervisory load for that particular program of study. The course related teaching load and the graduate student supervisory load is divided by faculty workload to yield academic staff numbers.
>
> The limitations of AREG primarily relate to those aspects of university activities that are difficult to quantify. For example, the model does not quantify other activities that the University expects and requires from teaching faculty, such as research and service. These activities are assumed to be supported in proportion to the formal instruction loads. The model does not provide sufficient flexibility to adapt to factors beyond the control of the university. Also, the model is insensitive to the fact that a teaching unit may require a minimum number of faculty members to maintain a viable unit, regardless of the instructional load of that unit. Limitations such as these confine the use of the model to a guideline in decision making that requires understanding and judgment rather than a substitute for decisions.

In the application of AREG, the value of each variable is determined in accordance with established University policy. Thus, section enrolees are estimated for each teaching Department and instructional level (Junior, Senior, Graduate), on the basis of approved enrolment projections. The numbers of graduate students for each teaching Department and program of study are similarly estimated on the basis of recent historical enrolment. Average section size and section hours/section are calculated for each group (Humanities, Natural Sciences, Social Sciences) and instructional level, based on the latest timetable statistics. Units of instructional effort per academic FTE staff are again based on timetable statistics and the academic FTE staff count in the most recent academic year. The instructional equivalent of graduate student supervision is determined in accordance with an approved scale (based on type of degree, and whether the student is full-time or part-time). The resulting calculated academic FTE staff values are aggregated at the Faculty level, as a guideline for budget decisions. It should be noted that the AREG approach is restricted to the academic staff components of Faculty budgets.

The AREG approach has been invaluable in assisting the University, through the efforts of the Office of Institutional Research, to develop a common information base for all those concerned with academic and physical planning, and with the budgeting process. The annual publication of an up-dated Fact Book ensures that this information is freely available. The administration of the University has benefitted greatly from the accumulation of this historical and systematic data base because of the increasing demand for accountability during the 1970's, and because of the need to make inter-institutional comparisons of workload and other data. Several workload/resource indicators [WSH/FTE teaching staff; section hours/FTE teaching staff, (section hours + section hour equivalent for graduates)/FTE teaching staff, (section hours/FTE teaching staff) x average section size] have also been developed to give different perspectives on the relative changes in workload experienced over time by organizational units.

One of the chief drawbacks of the AREG system is its complexity. Also, some of the variables are not well understood by the University community. Inter-institutional comparisons are difficult since most Canadian and U.S. educational institutions (and systems) use a credit system. These considerations have led the University Budget Committee to ask OIR to investigate alternative statistical indicators, and in June, 1979, the University Budget Committee endorsed the concept of a credit hour system to measure instructional workload, and requested that the President refer this matter to the University Program Review Committee.

A credit system is characterized by the assignment of an academic weight (credits, or credit hours) to courses and other student activities which are applied against the requirements for a degree. A degree is awarded when the candidate meets all institutional requirements including the accumulation of a prescribed number of appropriate credits. In the credit system, teaching load is quantified as course credit hours (the number of credits assigned to the courses taught) or in student credit hours (SCH), the sum of the products of the number of students times the course weight for each course taught.

It has been suggested that some of the advantages for a credit system are:

1. Student/course data are simplified and, hence, are more useful for operating, planning and management purposes.

2. The credit system enhances communication by making the University and its processes more easily understood by students, professors, administrators, board members, and government.

3. The credit system is standard in many North American universities and colleges, and Alberta high schools; comparability of data will enhance planning and management decision processes.

4. The number of student credit hours will become an important variable in budgeting and reallocation at each decision-making level in the University. The number of credits assigned to a student activity is an academic decision, made outside the budgeting context. The checks and balances which constrain the number of credits assigned to a particular activity include the requirement that the total number of credits per degree is fixed as are credit ranges for majors, requirements with respect to course levels, minors, and service courses. Changes in these parameters would require institutional approval.

5. The flexibility provided may encourage more innovative courses offerings, e.g. block courses; may ease the development of year-round statistics necessary for taking spring and summer session teaching into account as part of regular load; and may allow more readily for credit for practicum, cooperative or work experience.

6. The budget- or resource-related value of student credit hours will be determined in the budgeting context. It will be separated from academic or curriculum planning processes. The process by which the present system will be changed to the credit system may give a framework and specificity to an annual program review process.

7. The institutional use of the credit system may simplify and focus some aspects of the work of committees such as Faculty Curriculum Committees, the Curriculum and Academic Review Committee, the University Budget Committee, the General Promotions Committee, Faculty Promotion Committees, the Policy and Planning Committee, and the Position Allocation Committee.

It should be noted that if a change to the credit system is approved, it will not be possible to utilize historical data and it will be several years before definitive trend information is available. In order to reduce resistance to change it may be necessary to continue to produce statistics in the existing manner, along with those related to the new credit system. Relatively little cost is associated with this since the existing data sets are by-products generated by well-tested systems. A move to the credit system would require changes in operating systems and procedures, especially with respect to fees, student records, and calendars. However, since the move would simplify most procedures, short-term conversion costs would be offset in the long run. As we move toward standard systems, the possibility of shared systems development also is increased. There would be a transition period during which the new system would be phased in; this is based on the premise that as requirements for degrees were being changed for students in course, those students would have the opportunity to remain in the old system, if they chose.

It is reasonable to assume that as a result of the course-by-course review of academic programs, which is implied, there would be substantive changes in student academic programs beyond the changes in form represented simply by the course-to-credit system change. Thus the process offers the opportunity for an extremely thorough and structured review, since it evaluates each activity which a student may apply against degree requirements.

Recommendation II.10

That the Vice-President (Academic), in conjunction with the Office of Institutional Research, develop a document to facilitate consideration of the possible transition of the University to a credit system. This document should outline the academic advantages and disadvantages of the credit system.

* * *

University Information Systems

Frequently throughout its deliberations, the Committee has been impressed with the amount, quality and variety of data and analysis required to assess opportunities and problems in planning. At times we found that certain key data were missing, or not in a readily usable form, not sufficient in an historical sense, nor easily deduced from standard institutional or government statistics. The complexity of the University and the services it provides require that data for institutional decisions reflect the interdependencies among a wealth of variables or data elements. In the sense that these data must anticipate not one class of decisions but many, the information must be general enough to enlighten a broad range of decisions taken at many organizational levels in the University over the considerable period of time it takes to arrive at an institutional consensus.

The inherent complexity of universities makes it necessary to plan in advance for changes in order to meet expected fluctuations in circumstances. Such planning requires data resources which assist the University to decide on the programs needed, the academic staff required, and various support services from hospitals to libraries to computers, as well as the buildings to house them and associated special equipment. Each planning proposal must be evaluated against University objectives, fitted into the Government's and the University's financial plans, and must be studied to see how it influences and may itself be influenced by other developments in Calgary - from LRT to research parks. The implementation of major new plans, in itself a characteristic of a vital institution, adds to the complexity of a university and in turn makes new demands for further data and analysis.

Over the last decade considerable progress has been made in the development of operating systems in support departments and Faculties. These systems are an important source of information for planning and management. However, information systems in support departments (e.g. Controller's Office, Registrar, Physical Plant) typically are based only on those transactions which occur in each department. They keep account of dollars, student admissions, course registrations, grades, financial assistance, space and facilities inventories, staff data, and so on. Usable planning and management information must be a mix of data gathered by several University operating departments in the course of their work, as well as that derived from many other sources. It deals with trends and ratios, like dollars per year, or square metres per student, and more often than not must help answer "what if" questions which presuppose alternative assumptions about the future. Consider, as an example, the following planning information problem which anticipates the possibility of a serious shortage of certain research personnel. If the City of Calgary realizes its plans for vast research parks and, given the anticipated increase in medical research activities over the next five years, what are the important elements in a personnel policy for research technicians in order that the University maintain adequate research support services? Once such a policy is in place, what evaluative and critically oriented information will the University periodically require to determine if the implemented policy is adequate?

The limited resources available over the next five to ten years must be expended to maximize the effectiveness of day-to-day support operations (such as paying bills, writing cheques, registering students) while at the same time ensuring that these systems provide more useful and timely information for planning and budgeting. With the continuing need to provide more and better services to students and to support other University academic activities, there is a need for the most cost-effective development of operating systems. Rapidly changing computer and communications technology will offer new opportunities for information systems development. Increased capabilities available through new technology should be taken into account in the evolution of University information systems.

Within this context, it is essential that there be coordination of operating systems from a University information perspective as well as from the inherent functional or operational perspective of support services, so that the full potential of the University's data resource can be made available as required. This coordination recognizes that one of the greatest values of the University's data resource is derived from its contribution to management and planning functions which often fall outside the scope of specific operating systems in individual departments.

> Recommendation II.11
>
> *That the President's Office direct the evolution of integrated institutional information systems by requiring coordination among operating systems.*

Such coordination is essential to ensure that the University's evolving information systems enhance planning, budgeting and evaluation. Implementation of this recommendation need not require additional staff; however, it is necessary to define appropriate data structures, interfaces and standards, and to guarantee the overall integrity, security, and performance of systems associated with the University's data resources. Implementation will maintain the protection of individual privacy and the continued effective control by support departments of the information necessary for the efficient execution of their responsibilities.

* * *

CHAPTER III

THE FACULTIES

General Comments

In this chapter, University College and the Faculties are discussed individually. We present here information on the history, organization, role, programs, student-staff data and research relating to each unit, and make observations and recommendations on specific issues, prospects and problems observed to be currently important to the unit and to the University as a whole. The real strength and complexity of the University are apparent when one examines the rich diversity among and within the Faculties. Each unit is different, and the Committee has attempted to focus attention on those topics which it considers should be given visibility and priority both in the immediate future and throughout the decade. For a fuller understanding of some issues, the reader may need to refer to other, more detailed, University documents.

To provide the reader with a summary overview which compares student enrolment and staff complement, the following Tables are included. Tables 6 and 7 show the distribution of students by the Faculties in which they register; Table 8 illustrates relative student enrolment in courses taught by the Faculties, while Table 9 provides a summary of full-time equivalent staff in each Faculty. Comparison of the Tables indicates, for example, that while only a small number of full-time students are registered in the Faculty of Humanities, this Faculty is one of the larger teaching Faculties in the University. Thus, the Tables show that the registration pattern of students by Faculty is quite different from the pattern in which students enrol in courses, and thereby demonstrates interdependence among the Faculties.

Here, perhaps more than elsewhere in the Report, steps will already have been taken by individual units to implement changes which the Committee recommends. This is to be expected in a dynamic institution, but it does mean that some of our recommendations may already have been fulfilled.

TABLE 6

SUMMARY OF FULL-TIME STUDENT ENROLMENT
1979-80

Undergraduate Students by Faculty and Year of Program

	YEAR OF PROGRAM							TOTAL		GRAND
	1ST YEAR			2ND	3RD	4TH				
FACULTY	FRESHMEN	OTHER	TOTAL	YEAR	YEAR	YEAR	OTHER	MALE	FEMALE	TOTAL
Education	-	7	7	105	225	343	202	177	705	882
Engineering	227	150	377	274	240	195	6	1 018	74	1 092
Fine Arts	74	50	124	91	62	86	4	136	231	367
Humanities	-	-	-	39	53	70	-	64	98	162
Law	-	60	60	59	59	-	-	104	74	178
Management	-	-	-	3	315	267	39	435	189	624
Medicine	-	72	72	75	68	1	230	302	144	446
Nursing	32	28	60	53	58	64	-	4	231	235
Physical Education	78	84	162	109	118	2	-	222	169	391
Science	-	-	-	143	246	265	-	463	191	654
Social Sciences	-	-	-	117	254	329	-	332	368	700
Social Welfare	2	11	13	33	103	111	3	46	217	263
University College	1 457	515	1 972	1 295	372	107	65	2 103	1 708	3 811
TOTAL UNDERGRADUATE STUDENTS	1 870	977	2 847	2 396	2 173	1 840	549	5 406	4 399	9 805

Graduate Students by Field and Level of Study

	LEVEL OF STUDY		TOTAL		GRAND
FIELD OF STUDY	MASTERS'	DOCTORAL	MALE	FEMALE	TOTAL
Education	124	43	73	94	167
Engineering	63	35	94	4	98
Environmental Design	163	-	117	46	163
Fine Arts	11	-	6	5	11
Humanities	47	13	30	30	60
Management	16	-	7	9	16
Medicine	23	18	25	16	41
Nursing	1	-	-	1	1
Resources and the Environment	7	-	3	4	7
Science	96	81	142	35	177
Social Sciences	124	42	96	70	166
Social Welfare	25	1	6	20	26
TOTAL GRADUATE STUDENTS	700	233	599	334	933

TABLE 7

SUMMARY OF PART-TIME STUDENT ENROLMENT
1979-80

Undergraduate Students by Faculty and Session

FACULTY	FALL			SPRING 1979	SUMMER 1979	TOTAL		GRAND TOTAL
	DAY	EVENING	TOTAL			MALE	FEMALE	
Education	426	189	615	625	538	433	1 345	1 778
Engineering	116	139	255	120	56	399	32	431
Fine Arts	101	25	126	105	50	77	204	281
Foothills Hospital	99	-	99	-	-	-	99	99
Humanities	25	11	36	43	25	35	69	104
Law	3	1	4	-	-	3	1	4
Management	83	80	163	276	170	429	180	609
Medicine	6	-	6	-	1	2	5	7
Nursing	19	4	23	34	12	2	67	69
Physical Education	32	4	36	77	33	70	76	146
Science	62	20	82	145	104	217	114	331
Social Sciences	61	34	95	216	105	203	213	416
Social Welfare	36	103	139	115	35	75	214	289
University College	581	362	943	780	502	1 014	1 211	2 225
TOTAL UNDERGRADUATE STUDENTS	1 650	972	2 622	2 536	1 631	2 959	3 830	6 789

Graduate Students by Field of Study and Session

FIELD OF STUDY	SESSION							
	FALL			SPRING 1979	SUMMER 1979	TOTAL		GRAND TOTAL
	DAY	EVENING	TOTAL			MALE	FEMALE	
Education	165	32	197	78	149	197	227	424
Engineering	52	-	52	6	11	68	1	69
Environmental Design	21	-	21	48	43	77	35	112
Fine Arts	-	-	-	-	1	-	1	1
Humanities	23	-	23	1	1	8	17	25
Management	28	113	141	43	29	176	37	213
Medicine	-	-	-	1	2	2	1	3
Resources and the Environment	2	-	2	1	2	3	2	5
Science	18	-	18	9	13	37	3	40
Social Sciences	54	-	54	8	10	49	23	72
Social Welfare	20	-	20	2	4	12	14	26
TOTAL GRADUATE STUDENTS	383	145	528	197	265	629	361	990

TABLE 8

WEEKLY STUDENT HOURS BY TEACHING FACULTY
FALL 1979

	COURSE LEVEL			
FACULTY	JUNIOR	SENIOR	GRADUATE	TOTAL
Education	1 692	14 305	2 047	18 044
Engineering	5 423	15 022	995	21 440
Environmental Design	-	-	1 655	1 655
Fine Arts	4 120	7 326	143	11 589
Humanities	13 797	6 213	217	20 227
Law	-	2 197	718	2 915
Management	700	14 451	1 119	16 270
Medicine[1]	-	383	321	704
Nursing	689	2 865	3	3 557
Physical Education	3 669	2 668	21	6 358
Science	30 245	22 307	499	53 051
Social Sciences	20 750	20 202	776	41 728
Social Welfare	219	6 057	301	6 577
University College	-	144	-	144
TOTAL	81 304	114 140	8 815	204 259

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[1] Primarily Medical Science courses taught to non-Faculty of Medicine students.

TABLE 9

FULL-TIME EQUIVALENT ACADEMIC STAFF IN FACULTIES
1979-80

FACULTY	DEAN/ PROF	ASSOC PROF	ASST PROF	OTHER[1]	GRAD ASST (TEACHING)	TOTAL
Continuing Education	2.0	10.0	0.8	30.0	-	42.8
Education	31.2	34.0	8.7	33.3	17.5	124.7
Engineering	32.3	25.7	10.0	18.6	15.8	102.4
Environmental Design	7.7	7.7	2.5	3.4	-	21.3
Fine Arts	16.0	29.7	16.0	22.9	2.6	87.2
Graduate Studies	1.5	-	-	-	-	1.5
Humanities	25.0	41.8	17.3	23.9	10.0	118.0
Law	6.3	7.0	2.0	3.3	-	18.6
Management	5.0	24.0	13.0	11.5	2.0	55.5
Medicine	25.4	21.4	12.9	22.9	1.2	83.8
Nursing	1.0	8.5	7.0	7.5	0.5	24.5
Physical Education	4.0	11.7	10.0	14.8	-	40.5
Science	57.9	64.8	26.7	60.6	43.9	253.9
Social Sciences	49.0	71.7	21.3	41.2	30.3	213.5
Social Welfare	2.8	16.2	5.0	10.4	2.9	37.3
University College	1.0	-	-	13.3	-	14.3
TOTAL	268.1	374.2	153.2	317.6	126.7	1 239.8

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[1] Includes Lecturers/Instructors, other permanent non-teaching staff, sessionals and faculty on leave with assistance.

1. UNIVERSITY COLLEGE

History

In the Fall of 1975 the Board of Governors approved a recommendation from the General Faculties Council that the then Faculty of Arts and Science (with about half of the students in the University at that time) be divided into a Faculty of Science, a Faculty of Social Sciences, a Faculty of Humanities and a University College with "Faculty status". All four new units officially commenced operations on April 1, 1976. The responsibilities of University College were specifically identified by the Board of Governors in October, 1975, as follows:

(a) To register all those full-time students entering University for the first time who plan to pursue a general studies degree or to proceed to a major or honors degree in the three new disciplinary Faculties, and to register those students who seek admission to other Faculties, which require from prospective students a period of general studies.

(b) To register all transfer students meeting the admission requirements of the College who are not yet eligible to enter one of the Faculties within the University.

(c) To register all part-time, visiting, and other special students not eligible to enter other Faculties.

(d) To provide an academic counselling and program management service for the students registered in the College and coordinate the advising of students registered in major and honors programs in the three disciplinary Faculties.

(e) To maintain a centralized record system for the students in the College and the three new disciplinary Faculties.

(f) To deal with all mature non-matriculated adult students wishing to register in the University College in general studies programs or those leading to major or honors programs in the new disciplinary Faculties.

(g) To be responsible for the present interdisciplinary courses and programs and to develop and supervise these and other special programs.

(h) To study the need for a three year degree program with particular reference to the desirability of a pre-professional degree program.

(i) To review the report of the 1970 General Faculties Council *ad hoc* committee established to study education in the first two undergraduate years and determine whether any of its recommendations are desirable in the light of the current University situation.

Commencing with the 1977-78 year, students intending to enter the Faculty of Education and the Faculty of Social Welfare complete a year of study in University College prior to seeking admission to these professional programs. Similarly, students intending to enter the Faculty of Management are required to complete two years of study in University College before seeking admission to that Faculty.

Subsequently, when the University introduced the Effective Writing Qualification Test, University College was charged with administering it and with the maintenance of the Effective Writing Program.

Organization

Academic policy is primarily the responsibility of the University College Council, which has the powers of a Faculty Council. The College Council is composed of the Deans of the Faculties of Humanities, Science and Social Sciences, a representative from each Department within those Faculties, plus the Dean and one other representative from each of the Faculties which require a pre-professional general studies program of their students. In addition, the Council includes four students, all faculty members who hold a full-time appointment in University College, and the Chairpersons of all Standing Committees.

The Provost is the chief administrative officer of University College, and the Deans of the three disciplinary Faculties in rotation serve two-year terms as Dean of the College. Other University College officers currently include two Associate Provosts. Three Assistant Deans drawn from the three disciplinary Faculties derived from the old Faculty of Arts and Science maintain offices in University College to provide academic advice to students.

With the exception of some instructors in College-sponsored interdisciplinary programs, the College has no teaching staff; these belong to the traditional Arts and Science Departments and to the other participating Faculties which require a pre-professional general studies program of prospective students.

Role

In general, University College views its role as including: the provision of a "broadening" element in the first year programs, the continuation and development of general and some pre-professional degree programs, the provision of opportunities for students who choose to pursue general studies programs or who, for a variety of reasons, find themselves not academically prepared to meet the requirements of a professional, major or honors program, the provision of easily accessible and sound academic counselling and the maintenance of a centralized record system for the Arts and Science units. In addition, University College has an important role to play in the development of interdisciplinary courses and programs in close cooperation with all interested Faculties.

Programs

Students who wish to complete a "non-major" program may remain in University College and complete 20-course (4-year) B.A. (General Studies) or B.Sc. (General Studies) degrees. In the calendar year 1979 the numbers of such degrees awarded were 55 and 23 respectively. These programs emphasize a broad liberal education without concentration in a specific field. Students may seek admission to another Faculty at any time. Students in these General Studies baccalaureate programs may declare minor fields of study from University College or from a number of other participating Faculties.

Seven interdisciplinary programs are offered by University College, all of which have the status of a minor field of study for students in a major or honors program in the Faculties of Humanities, Science and Social Sciences, or for students in a general studies program in University College. These minor fields are: Canadian Studies, Latin American Studies, Law in the Liberal Arts, South Asian Studies, Soviet and East European Studies, Urban Studies, and History and Philosophy of Science. A smaller number of additional courses is normally offered each year in the Interdisciplinary Studies framework, on topics like physical science, women's studies, education and society, the humanities, etc.

Other Faculties which require their students to undertake general studies in University College are required to offer at least one junior course which is open to all students in University College.

University College also offers partial programs for transfer with advanced standing to other institutions where degree programs may ultimately be completed in disciplines like Medicine, Agriculture, Forestry, Dentistry, Pharmacy, Nursing, Veterinary Medicine, Home Economics and Optometry.

Enrolment

The full-time student enrolment in University College has grown rapidly since the division of the Faculty of Arts and Science:

	University College	Percent of Total Full-Time Students
Fall 1976	2,193	20.2
Fall 1977	2,926	27.1
Fall 1978	3,544	33.3
Fall 1979	3,811	35.5

Part of this growth is due to the decisions of the Faculties of Management and Education to require prospective students to engage in general studies in University College prior to admission to these Faculties. Furthermore, students intending to complete degrees with major fields in the Faculties of Humanities, Science or Social Sciences are not required to seek admission to those Faculties until their final year.

Part-time student enrolment in University College has been as follows:

	University College	Percent of Total Part-Time Students
Fall 1976	652	21.9
Fall 1977	686	22.9
Fall 1978	824	27.1
Fall 1979	943	29.9

Observations and Recommendations

The establishment of the University College and its relationship to the Faculties of Humanities, Science and Social Sciences with programs commencing at the second year level clearly recognized that this arrangement was partly "experimental". The following recommendation was approved by GFC:

> It is recommended that an evaluation procedure be instituted within three to five years after the division of the Faculty of Arts and Science has occurred and that this evaluation be based on how well the objectives outlined in the Terentiuk report have been or are being achieved by the new academic units created by the division.

In anticipation that the response to the evaluation will be positive and that a process of "fine tuning" can address any issues which are raised, the following recommendations are presented. One of the arguments used to support the division of the Faculty of Arts and Science in 1976 was its large size, which was deemed to be detrimental to the best interests of its students. The continuing growth of the formal enrolment in University College now raises the same argument, and the transfer arrangements to other Faculties should be examined as part of the review process. While the extreme program flexibility offered to students is highly advantageous, there are also a number of negative features. Students who pursue programs with the intention of declaring a major field at a late stage in the program should have a closer identification with their major Department/Faculty in order to ensure that they will be advised as "majors" in that field. Planning for senior course enrolment is frequently made difficult by uncertainty respecting the number of majors in a given field; this may work against the quality of instruction that can be offered by impairing resource allocation.

Recommendation III.1.1

That, without restricting the nature of the review of University College or interfering with its character as originally prescribed, GFC also address the following issues:

(a) the rapid growth of enrolment in University College, the potentially negative effects of this on student programs, and changes in procedures and/or regulations which would encourage students to transfer to a disciplinary Faculty earlier in their programs,

(b) the simplificaiton of administrative arrangements for University College

> *by elimination of the position of Provost of University College, and restyling the title of the chief executive office of the College as Dean of University College, thereby confirming full Faculty status for University College,*
>
> *(c) the use of the probationary student category for students in University College.*

* * *

One of the most important issues facing University College is the question of space to fulfill its mandate more adequately. The physical arrangement of the space occupied by University College is uninviting, which is particularly critical since freshmen are concerned to a large extent. It is a third floor location which is not readily accessible, and this is a deterrent to easy communication with students. The elevator service is barely adequate, given the number of students enrolled in University College plus other students using the Social Sciences Building, and the stairway access is dismal and depressing. The waiting room facilities are inadequate and there is virtually no privacy for consultations with students; both factors are unlikely to create a positive impression on students coming to the University for the first time. Most other Faculties and, indeed, many Departments, have lounge and waiting areas more tastefully arranged than does University College.

In many ways, relocation of University College to other more accessible and attractive space in a high traffic part of the campus core would be preferable to renovation of existing space. This is the highest priority for the College, and should be a high University priority because of the large number of students involved, and the importance of the freshman year in the determination of student success.

Recommendation III.1.2

That steps be taken as soon as possible to improve the quality of the University College space either through renovation of existing space or relocation.

* * *

Although there continue to be some difficulties in the area of program management as a result of the large number of rules and regulations related to course registrations, different degree programs, transfer arrangements, deadlines, etc. these are in hand and should continue to be under control unless additional drastic changes are made. The present staff complement seems adequate to cope with this area.

Recommendation III.1.3

That the staff complement dealing with program management activities be continued at the present level.

* * *

The experience of University College suggests that a substantial number of students would benefit from a measure of academic counselling, but are not seeking it. The physical facilities assigned to University College may be a factor in their reluctance to seek academic advice. Although students are urged to seek advice on a voluntary basis, the difficulty continues to be making them comfortable in taking such action; frequently it is only after they are in academic difficulty that they seek advice. Students entering the University for the first time are frequently confused, uncertain and uninformed (or misinformed) and many make poor academic decisions which could be avoided. A student's ability to adjust to the freedom and choice available in programs at this University might be greatly enhanced if a brief initial meeting with an experienced and knowledgeable academic advisor were required at an early stage in the student's career (in the student's first term, and, ideally, prior to the deadline for withdrawal from courses). See also comments on admission and counselling in Chapter IV, Section 1.

Recommendation III.1.4

That University College develop a plan for more accessible academic counselling for new students at an early stage in their program, and that this plan minimize the incremental resource requirements by drawing extensively on experienced personnel in those Faculties which will ultimately benefit from this program.

* * *

At present University College offers a small number of Interdisciplinary Studies courses and manages seven minor programs which are also interdisciplinary in nature. There are no plans to expand these offerings to any significant extent; rather the College wishes to concentrate on developing the existing offerings to a high standard. Notwithstanding the mandate in this area which was assigned to University College, the funding of Interdisciplinary Studies courses has always been problematic. The Committee endorses the concept of Interdisciplinary Studies courses, and would encourage all Faculties to advise students to include them as options in their programs, where appropriate. On a number of occasions funding for these courses has been dealt with on a contingency basis. Provided that course enrolments and the number of students registering for the minor programs justify it, funding of these courses should be regularized. Funding at about $50,000 to $60,000 per annum ('80 dollars) is required to maintain the current level of offerings. This is treated further in Chapter V.

> Recommendation III.1.5
>
> *That, consistent with the mandate which the University assigned to University College in the area of interdisciplinary studies, an appropriate level of financial support for interdisciplinary courses and minor programs be provided.*

* * *

With the recent lowering of the age for non-matriculated adult students from 23 to 21, University College is already experiencing a substantial increase in students applying for admission under this category. Furthermore, if there are any serious University initiatives to attract part-time students, one may expect many of them to fall into this category. Interviews prior to admission of non-matriculated adult students are an essential ingredient of the success of this program and should be continued. This means that both University College and the University may have to devote more resources to pre-admission counselling for these students.

> Recommendation III.1.6
>
> *That a high priority continue to be placed on pre-admission interviews of non-matriculated adult students applying for admission, and that any substantial increase in this load be recognized through the allocation of resources to maintain an adequate staff level for this purpose.*

* * *

The General Studies Degree program as it now exists seems to be meeting the needs of a significant number of students. The main strength of the program is its flexibility which allows a student to design a program which meets individual needs. Some minor program changes may be required but no fundamental revisions seem necessary or desirable. The experience of other universities who are reviving the "core" curriculum concept should be monitored to see if these have implications for the General Studies program. This type of curriculum should also be considered when the College investigates a possible three-year degree program (a responsibility assigned to it when the College was created).

> Recommendation III.1.7
>
> *That the 20-course General Studies Degree program remain essentially unchanged.*
>
> Recommendation III.1.8
>
> *That University College conclude its investigations into a potential new three-year degree program, and report as soon as possible to GFC with recommendations on the feasibility and need for such a degree program, as well as the proposed format if the basic recommendation is that such a program be developed.*

* * *

The response of The University of Calgary to the Symons' Report on Canadian Studies led to the clearer identification of courses in this area, to some new courses, to the establishment of a minor in Canadian Studies, and to the initiation of the annual Visiting Professorship in Canadian Studies, funded in part by the Students' Legislative Council. There was a further suggestion that a major program in Canadian Studies be developed in due course. Given our increasing resources in this area, e.g. the Arctic Institute of North America, the development of the Canadiana collection in the Library, the Canadian architectural archives, etc., our Canadian Studies program should receive greater emphasis.

> Recommendation III.1.9
>
> *That University College examine the feasibility of offering a major program leading to a B.A. (Canadian Studies) at the earliest opportunity.*

* * *

An increasing number of students who are inadequately prepared to enter specific Faculties, e.g. Engineering, or who are undecided as to their career path, are entering University College for general studies in the first instance, with the view of testing their interest and ability in certain fields. For students who perform satisfactorily in University College programs, the transfer barriers which exist when they seek admission to other Faculties should be minimized.

> Recommendation III.1.10
>
> *That University College continue to work with other Faculties to develop arrangements which will permit students to transfer to these more specialized programs with extensive recognition and credit for appropriate courses completed in their general studies program.*

* * *

The introduction of the Effective Writing Qualification Test and the Effective Writing Program, with the subsequent decision to assign the administrative responsibility for this program to University College, has placed a major burden on this unit which has impeded the full development of some other programs and services. Furthermore, the Effective Writing Program has only received minimal funding, which has made its management more difficult. With the recent policy changes which will permit students to satisfy the Effective Writing requirement by satisfactorily completing certain English courses, some of the pressure on University College may diminish, but the initial testing load will remain. Now that this program and the need for it have acquired more general acceptance in the community, every effort should be made to establish a comparable province-wide testing service which all the Alberta universities would use, and which would be financed directly by the appropriate provincial government departments. The college system and the high school systems might appropriately be included as partners in this venture.

Recommendation III.1.11

That the University initiate discussion with the other Alberta universities on the matter of a province-wide effective writing qualification test.

* * *

2. FACULTY OF CONTINUING EDUCATION

History

The Division of Continuing Education was established in 1965 by amalgamating two University functions in order to serve the adult part-time student better. These were the Summer Session and Evening Credit programs, which had been administered by the Faculty of Education, and the non-credit (i.e. non-degree) or Extension program, which had previously been administered as a branch of the Department of Extension of the University of Alberta.

The Division was established to exercise the responsibility given to the University through the Alberta Universities Act, Section 15 (2):

> It is a duty and function of each university to contribute to the educational and cultural advancement of the people of Alberta at large and a Board may
>
> (a) establish and provide programs, services and facilities to carry out those purposes, and
>
> (b) cooperate with any other institution, or person for the establishment and provision of such programs, services and facilities
>
> in such manner as the Board considers proper.

In 1977 the Division was redesignated the Faculty of Continuing Education, a decision which indicated the University's increased commitment to continuing education and to the provision of lifelong learning opportunities, both credit and non-credit (GFC Meeting, April, 1977). The Faculty facilitates off-campus credit course offerings, with the approval of the Department offering the course, but credit courses offered on campus during the evening are integrated into the regular "extended day" University timetable and are taught as part of normal teaching loads. For the convenience of part-time students, the Faculty of Continuing Education normally provides a special evening credit timetable. Spring and Summer Session credit course offerings, and the instructors appointed to teach them, are also subject to the apporoval of the respcetive Department/Faculty offering the course, but the Faculty of Continuing Education provides the organizational framework for these sessions and a focal point for student input with respect to the need for specific courses or with respect to special scheduling problems.

For administrative purposes the French Centre and Native Student Service are both located in this Faculty.

The Faculty of Continuing Education works with Departments and other Faculties to provide a wide range of non-credit course offerings (daytime, evening and weekend), workshops, seminars, conferences, distance education and educational travel programs. Some non-credit courses lead to a certificate, e.g. Management Development Certificate and Real Estate Certificate.

In 1979-80 the Faculty of Continuing Education served over 26,000 adult students in nearly 800 non-degree seminars and conferences, and over 8,000 registrations in 612 credit classes in the special sessions. Growth to this level of participation reflects societal trends toward acceptance of lifelong learning and the expectation that educational services will be available to the adult learner at convenient locations and times.

Organization

The Faculty of Continuing Education operates with a Dean, three Assistant Deans (who each carry full Program

Director responsibilities) and fifteen Program Directors, several holding joint appointments in other Faculties. Program Directors are assigned liaison responsibilities with one or more University Faculties, Departments, Institutes, or special University-related groups like the Alumni Association. Faculty members have similar liaison assignments with respect to various community groups and organizations, in keeping with their disciplinary backgrounds. These networks are designed to provide a crosslinking between community needs and University resources, and for consultations with the community with respect to course/program offerings.

The support services of the Faculty include the Conference Office, which is generally available to the University community for the organization of conferences and for provision of logistical support.

The Council of the Faculty of Continuing Education includes voting representatives from each of the other 14 disciplinary Faculties and from University College. In 1977 GFC authorized

> That, subject to the control of the General Faculties Council, the Council of the Faculty of Continuing Education be empowered to:
>
> (a) determine those areas in which the Faculty will serve the community;
>
> (b) enter into agreements with other Faculties, institutions, agencies and governmental departments concerning the sharing of responsibility for courses of instruction;
>
> (c) establish specific advisory committees for programs offered by the Faculty, where deemed applicable by the Dean of the Faculty; and
>
> (d) make such other recommendations to the Dean of the Faculty as are deemed appropriate by the Council.

Role

In 1977 GFC approved

That the general objective of the Faculty of Continuing Education be to work in close cooperation with other Faculties and units in The University of Calgary in order to provide continuing education programs and services to the community, including:

(a) organizing non-degree courses, workshops, seminars and other types of educational events, some of which lead to certificates or citations;

(b) facilitating, with the agreement of the appropriate disciplinary Faculties, the provision of degree credit courses to part-time students of The University of Calgary, where these are not otherwise available;

(c) providing consulting and other forms of assistance to individuals, community groups and institutions in matters relating to the academic specialties and professional interests of faculty members;

(d) offering training programs to those engaged in teaching adults and in organizing and conducting continuing education programs;

(e) carrying out research relating to adult education and/or disciplinary fields; and

(f) ensuring that a high level of coordination and mutual support exists between The University of Calgary Faculty of Continuing Education and other agencies operating in the Province.

Observations and Recommendations

The Faculty of Continuing Education as currently constituted has a unique two-fold mandate, one with regard to non-credit courses and the other with regard to Spring, Summer and off-campus credit courses (now identified as Special Sessions courses). The number of courses offered and the number of individuals served each year provide strong evidence of the need for both of these types of courses. However, Chapter IV, Section 7 of this Report deals with the possible need for greatly enhanced off-campus initiatives, and if the recommended needs assessment (Recommendation IV.7.3) shows that this is desirable and warranted, it would be appropriate to review the respective academic and administrative roles of Continuing Education and the disciplinary Faculties before an off-campus expansion of credit course and program offerings is undertaken. Such a review should also extend to credit courses offered in all Special Sessions.

In that the Faculty of Continuing Education draws on the expertise of faculty members appointed and located in other Faculties, it parallels the Faculty of Graduate Studies. However, the Dean of the latter, in conjunction with the Council of the Faculty of Graduate Studies, has the authority over graduate programs, whereas the credit courses offered through the Faculty of Continuing Education are under the authority of other Departments/Faculties. This may create certain jurisdictional problems, particularly with respect to professional development courses.

Recommendation III.2.1

That the Vice-President (Academic) arrange for a review of the academic and administrative roles of the Faculty of Continuing Education and the disciplinary Faculties with respect to all credit courses offered in the Spring/Summer Sessions, and all credit courses and programs offered off-campus, with a report and recommendations to be provided to GFC.

* * *

Any expansion of course offerings in the Spring and Summer sessions inevitably leads to a discussion of the desirability of "year-round" operation. We favour a system which will introduce greater flexibility into the cycles of course offerings, providing both students and faculty with more choice as to when and where their work will be concentrated. A trend is emerging in which a greater number of courses are being offered during late afternoon and in the evening during the Spring and Summer sessions. Such options make it easier for part-time students to achieve their goals while pursuing employment, and result in more extensive use of facilities during all times of the year and hours of the day. (See also discussion of participation rate for part-time students in Chapter IV, Section 1).

If there is to be increased teaching during the Spring and Summer sessions it is essential that the University move to a statistical base which reflects year-round instructional activity. The Committee was told that some Faculties were reluctant to expand Spring/Summer course offerings lest their students elect these courses and not attend in the Fall when "they were counted". The GFC Standing Committee on Special Sessions has examined the evidence and reports that this concern has not really been a major factor in the development of Spring/Summer offerings. In the interim, this Committee endorses the action already taken by GFC, on the recommendation of the Special Sessions Committee, "that the Vice-President (Academic) ensure that the University Budget Committee is provided with additional appropriate workload information indicative of the contributions of academic units to Spring and Summer session course offerings".

We strongly support the establishment of three-year rolling plans for credit courses which are offered in the

Spring and Summer sessions and in off-campus locations, to permit part-time students to plan their progress toward a degree. The recently created GFC Special Sessions Committee should be encouraged in this direction, and in the clear identification of the degree programs which can be completed entirely or partly on a part-time basis.

Recommendation III.2.2

That expanded Spring and Summer session course offerings and more flexible time-tabling be encouraged where course enrolment would justify this.

* * *

In practice, decisions on non-credit course offerings are now entirely determined by the Faculty of Continuing Education. On the other hand, credit courses, while approved by the relevant Faculty Council in the first instance (Universities Act, Sec. 37(1)(a)), go to GFC for approval following review and recommendation by the GFC Curriculum and Academic Review Committee. Full Faculty status for Continuing Education now suggests that a parallel (although not necessarily identical) mechanism be established for the review and approval of non-credit courses. This would enhance the status of non-credit courses, enhance communication within the University, and provide for full University input in continuing education programming. The establishment of such an approval mechanism (which might be restricted to regular reporting to GFC for certain types of courses) suggests further that the Faculty of Continuing Education review the philosophy which underlies the range and type of non-credit courses offered.

Recommendation III.2.3

That the Faculty of Continuing Education develop, for review and approval by GFC, a statement of the overall philosophy covering non-credit course offerings and procedural *guidelines for the development of non-credit courses and certificate programs.*

Recommendation III.2.4

That General Faculties Council request its Curriculum and Academic Review Committee to develop a standing procedure for the approval of non-credit courses offered by the Faculty of Continuing Education, such procedure to parallel that now established for credit courses, but which reflects the different nature of these courses.

* * *

Seminars, workshops and conferences are used extensively in continuing education programming, and by the various learned and professional societies which frequently meet on the University campus. Special skills are required to organize these educational events efficiently, and this service is currently provided by the Conference Office. This office has developed an excellent reputation on this campus, but its mandate to serve the broad University community suggests that it might be more appropriately placed elsewhere in the administrative structure of the University.

Recommendation III.2.5

That a review be undertaken to determine whether the Conference Office should continue to reside within the Faculty of Continuing Education.

* * *

The nature of the activities of the Faculty, and in particular its public relations aspects, require that the Faculty be located appropriately.

Recommendation III.2.6

That high priority be given to locating the offices of the Faculty of Continuing Education in an area which will ensure that they are easily accessed and well identified.

* * *

The knowledge explosion has placed increasing emphasis on professional upgrading courses for individuals who completed their university education some time ago. To the extent that the upgrading of professional education becomes mandatory, the needs of this group will have to be assigned a high priority during the next decade, but the costs of such courses should be fully recovered through fees.

Recommendation III.2.7

That continuing emphasis be given to the provision of a selection of professional development courses and programs which will be of interest and assistance to members of the community, without detriment to the general educational and cultural courses offered through and by the Faculty of Continuing Education.

* * *

Some credit course offerings through the Faculty of Continuing Education, particularly those that are offered off-campus in more remote areas of the Province, involve innovative delivery methods (e.g. teleconferencing, T.V. courses, etc.) and non-standard formats (e.g. long weekend lecture/workshop periods). While this is to be encouraged, a policy should be established with respect to University approval of such variations in the authorized course format, in order to assure the University community and the students that these courses are equivalent to those offered on-campus.

Recommendation III.2.8

That, with the exception of such pilot projects as may be approved from time to time by the Vice-President (Academic), the Faculty of Continuing education develop policy proposals and operational guidelines for the use of innovative delivery methods in credit courses, and that these be *presented to GFC for approval, following review by the Curriculum and Academic Review Committee.*

* * *

A number of other issues which affect Spring and Summer session credit course scheduling are addressed elsewhere in this Report because of their more general implications and will, therefore, only be mentioned here. The issue of more centralized involvement in timetabling of courses at times and places convenient for students is discussed in Chapter IV, Section 1. One clear implication of any move toward a co-op program (see Chapter IV, Section 7) is that a larger selection of required and elective courses would have to be offered during Spring and Summer for those students who are in supervised employment during the Fall and Winter phase of the cycle. The Faculty of Continuing Education already has extensive experience in offering courses in off-campus locations, both in other parts of Calgary and elsewhere in the Province, and this relates directly to the discussion of University "outreach" and a possible "downtown presence" (see Chapter IV, Section 7).

3. FACULTY OF EDUCATION

History

The Faculty of Education had its beginnings as a provincial normal school which became part of the University of Alberta in 1945. Prior to 1966 the programs of the Faculty of Education were determined largely by the Faculty of Education at the University of Alberta. In a very real sense The University of Calgary had its roots in the Faculty of Education.

Organization

The Faculty of Education consists of four academic departments (Educational Administration, Educational Curriculum and Instruction, Educational Foundations and Educational Psychology) and an additional teaching unit, the Practicum Office. Also, there are three "service" units, Computer Applications, Learning Technology and the Materials Centre. The Dean has an administrative assistant and two Associate Deans, each Department has a head, the Practicum Office has a director, each "service" unit has a coordinator, and other individuals have release time from teaching to carry out specific administrative tasks. (* See footnote on the recent reorganization of the Faculty page 99.)

Role

In the development plan for the Faculty of Education the Faculty's role is implied in its commitment to contribute to University goals in four major ways:

1. Preparation of Elementary and Secondary School Teachers

   Achieving the proper balance between generalist and specialist education at the undergraduate level is a constant challenge to the Faculty. In the area of subject matter preparation, teachers of younger children tend to be generalists while those teaching older children and young adults tend to be specialists.

Another challenge is the proper placing, sequencing and balancing of traditionally organized university courses and practicum experience.

The Faculty promotes excellence in teaching through designed and supervised teaching experiences, demonstration lessons in schools, dissemination of knowledge about a variety of instructional techniques as well as teaching methodologies and through continuous evaluation of Faculty instruction.

2. The Promotion of Educational Leadership and the Training of Specialists

The general objectives of the Faculty in this area may be summarized as offering leadership and specialists' training in its diploma, master's and doctoral programs; exploring and appraising changes and innovations taking place in the schools, particularly those that pass the test of responsible scrutiny, and conducting research into the efficiency and effectiveness of educational processes and organizations.

3. The Advancement of the Study of Education through Research and Publication

The Faculty promotes the study of education by making provisions for individuals and groups within the Faculty to undertake research and encouraging the publication of their research. It facilitates research in the schools through mechanisms such as the University-Schools Research Liaison Committee. Information about research support and opportunities is made known to members of the Faculty through publications of the University Research Grants Office and other channels.

The Faculty supports the dissemination of knowledge through provisions for Faculty members to attend conferences, sponsorship of visiting scholars and support for publications such as The Journal of Educational Thought. Communication about development of the research areas is facilitated through contact with other Faculties, national research centres and international institutes and organizations.

4. Service to the Profession and the Community

Members of the Faculty participate in regional, national and international academic as well as professional associations. They also place their expert knowledge at the disposal of relevant publics through non-credit courses, topical workshops, consulting and voluntary work in community organizations.

Programs

The undergraduate programs follow a year of study in University College and are not departmentally oriented but are structured to provide B.Ed. degrees in either elementary or secondary education, and for holders of approved degrees. There is also a professional diploma program. The University has endorsed the Educational Curriculum and Instruction application for a Ph.D. program in the area of language arts; the other Departments already have approved Ph.D. programs. The quality of the Ph.D. program in Educational Administration has recently been questioned by the Faculty of Graduate Studies and is presently under review.

Student-Staff Data

The number of weekly student hours (WSH) taught by the Faculty reached a peak of 22,877 in 1975 and declined by 21% to 18,044 by 1979. Over the same period section enrolees declined from 7,950 to 6,498, a drop of 18%. On the other hand the number of course sections taught increased over that period from 423 to 509, an increase of some 20%. Also, the number of full-time graduate students is up over the 1975 count. The full-time equivalent (FTE) academic staff increased from 124.4 FTE in 1975-76 to a high of 132.8 FTE in 1977-78 and has recently dropped back to 124.7 FTE in 1979-80 as the effects of position reallocation began to appear. The WSH/FTE ratio for each of the teaching departments, excepting the Practicum Office, is below the University average.

Research

Research activity and quality within the Faculty appears to be spotty. Some units, such as Computer Applications, are exclusively research and development oriented. There are a number of individuals within the Faculty who appear to have produced no research in some years, but others are reasonably productive. The record is so heterogeneous throughout the Faculty, and even within Departments, that generalizations are difficult to make.

Observations and Recommendations

Any attempt to understand or evaluate the Faculty of Education must begin with an appreciation of the set of circumstances within which the Faculty functions. In addition to dealing with the University administration, the Faculty must deal with the Department of Education, the School Boards, the Alberta Teachers' Association, and public opinion. The demands are varied. It is a difficult situation and the Faculty is not always master within its own house. Any action on the part of the University must take into account this set of circumstances.

Emphasis within the Faculty has been moving away from the traditional undergraduate programs as enrolment has decreased, towards such activities as the practicum and in-service work with teachers. This shift in emphasis, aside from being practical under the circumstances, seems to have reasonably wide support. This should be viewed as a permanent shift in emphasis even if future undergraduate enrolment should rise. The Faculty appears to be committed to these programs. Thus, among the programs currently being developed within the Faculty are: the extended teaching practicum, in-service courses for teachers, early childhood education, and special education for teachers of handicapped students.

The extended practicum is already functioning, has wide support within the Faculty, and is a useful mechanism for maintaining and improving the quality of the teachers who are trained here. Its administration has been beset by problems arising out of the special interests of the

Minister of Education, the School Boards, the ATA and individual teachers, although many of these problems seem to have been resolved. This practicum program was developed through a special government grant which expires in 1981, and the University should give strong support to the application for continuation of government funding for it.

> Recommendation III.3.1
>
> *That the University strongly support the application for continuation of government funding for the extended practicum, with the understanding that a continual review of its implementation be carried out with the aim of increasing efficiency and reducing costs wherever possible.*

* * *

In-service courses for teachers were offered for the first time in 1979. The concept of upgrading the competence of already-functioning teachers is to be encouraged. However, we have no real information at this time on the acceptance or effectiveness of this program. The provision of in-service training for professionals in the community is not limited, of course, to the Faculty of Education. Different units within the institution handle this task in different ways and it is possible that the various programs could benefit from the experience of others.

> Recommendation III.3.2
>
> *That support for in-service courses for teachers be continued for a period of three years and that a study be undertaken by a committee of GFC to determine the acceptance and effectiveness of the courses, with a decision required concerning the continued support or termination of the program and its relation to other in-service teaching within the institution.*

* * *

The program in early childhood education has been approved by GFC and approved in principle by the Department of Advanced Education and Manpower. The program in special education is presently under consideration and it is expected that a specific proposal, which will include external funding, will come forward shortly. Within the context of the general statements made elsewhere in this Report concerning University support for, and long-term commitments within, the Faculty of Education, this proposal, when it does come forward, should receive detailed scrutiny. Other Faculty proposals (e.g. Religious Studies and Moral Education, Canadian Studies, non-certification Bachelor of Educational Studies degree, etc.) appear to be less developed and not of a pressing nature, although the Dean of the Faculty attaches high priority to the non-certification degree program.

No discussion of the Faculty of Education can avoid the question of quality. Faculties of Education in general have low standing in the academic community throughout North America. In such a climate a great deal of unwarranted generalization is inevitable; the competent are tarred with the same brush as the incompetent. In 1976, an evaluation of the Faculty of Education by a Presidential review committee, produced twenty specific recommendations for change and a number of widely publicized criticisms of the Faculty. There is still wide disagreement within the Faculty concerning the validity of the 1976 evaluation, as well as the effectiveness of some of the steps which have been taken to meet the criticisms that were made. Faculty members have expressed their own opinions on the quality of the Faculty which range from "largely competent" to the view that some fifty percent of the Faculty's members are functioning at below acceptable levels of competence. It should be emphasized that these are personal views, but they are indicative of the way in which some individuals in the Faculty view one another and the Faculty as a whole. Individuals within the Faculty have also questioned the amount and quality of research being carried out, although there seems to be agreement that some people are performing very well in this regard. Suggestions have been made that the University fund research support personnel such as computer programmers and statisticians. This raises the question of whether University resources should be provided to those units in which quality research is already being done, or where improvement in quality and quantity is needed. This question is discussed at some length in Chapter V.

To be blunt, if it is true, as some individuals both inside and outside of the Faculty of Education believe, that the level of quality at which a significant proportion of its members are functioning is less than acceptable, then the problems of the Faculty are very deep-seated and not easily remedied. Changes in emphasis from one type of program to another, the introduction of new courses and programs, and even the hiring of new staff unless those staff are significantly superior to many of the existing staff, will all be cosmetic. It is our view that, whatever the cause, as long as this real or imagined problem exists, and is not openly addressed, the Faculty of Education will function below whatever level of abilities its individual members possess. It may be that another detailed evaluation will be required.

Recommendation III.3.3

That increases in allocations of University support to the Faculty of Education not occur until it is demonstrated that fundamental problems of quality, administrative structure and policy determination and implementation have been rectified.

* * *

The Faculty of Education, perhaps more than any other on campus, has high visibility. The public at large does not generally understand the details of intra-university administrative divisions, and so we are all judged by each other's actions. Moreover, it is the Faculty of Education that educates the people who educate our children. If there are problems with this Faculty they must be taken seriously and every effort made to remedy them. If the problems that have been widely discussed do not exist, then this point should be made clearly and forcefully to the Faculty itself, to the rest of the University, and to the public, in a manner that will carry conviction.

Recommendation III.3.4

> *That the University take an active interest in establishing and maintaining the quality of instruction and research within the Faculty of Education, recognizing that the University and the community have legitimate interests in the functioning of this unit.*

* * *

To provide one specific example, the Dean of the Faculty of Education has listed "science" as his number one "improvement priority", and has expressed concern with "the sorry state of science instruction through the elementary and junior high school years" and sees it as an issue that "will surely explode in the face of teacher education" in the future. If we accept this as a serious problem then the University must decide how resources can best be spent to solve the problem. One obvious question is whether the resources should be placed administratively within the Faculty of Education or the Faculty of Science or within another unit capable of joint effort. This is a problem which must be resolved before a specific recommendation can be made.

Recommendation III.3.5

> *That the problem of inadequate training of elementary and secondary science teachers be given immediate study and some priority given to redressing the problem in the most effective manner.*

* * *

However, a partial solution to problems related to the adequacy of subject-matter training of secondary school teachers may be initiated if other Faculties are willing to provide some courses of specialized nature for secondary school teachers.

Recommendation III.3.6

> *That serious consideration be given by the University to offering the B.Ed. (Secondary) degree only as a degree for holders of approved degrees in subject matter areas.*

* * *

The Faculty of Education is very heterogeneous, not only in its interests and abilities, but also in its opinions. The only point on which there appears to be general agreement among many individuals within the Faculty is that, if one is to work on the principle of general consensus within the Faculty, no significant changes can be expected to occur. Our own evaluation is that things are not well within the Faculty of Education and that significant changes must occur. Consequently, we believe that a method must be found for making and implementing what may be difficult and unpopular decisions within the Faculty, with the clear understanding that the University as a whole has an interest in and responsibility for these decisions.

Recommendation III.3.7

That action be taken to effect a major administrative restructuring of the Faculty of Education, neither presuming nor precluding the elimination of some or all of the present academic departments, one of the goals of the restructuring being the more effective centralization of control of Faculty policy and its implementation in the Office of the Dean. (See footnote below.)*

* * *

Such a restructuring should consider the possibility that the Faculty is "over administered" with too much of the Faculty members' time being spent in minor administrative functions.

Keeping in mind the heterogeneous interests, productivity and abilities that seem to exist in the Faculty of Education, we suggest in summary that three things must be done:

(1) specific areas of strength must be identified;
(2) aspirations within those areas must be identified;
(3) those aspirations must be developed consistently.

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*Since this section of the report was written, the Council of the Faculty of Education, GFC and the Board of Governors have approved a reorganization of the administrative structure of the Faculty, creating a Department of Teacher Education and Supervision, and amalgamating Educational Administration and Educational Foundations into a Department of Educational Policy and Administrative Studies. This reorganization is to take effect April 1, 1981.

4. FACULTY OF ENGINEERING

History

Engineering has played a major role in The University of Calgary since its inception as a Faculty in 1965-66. From the outset, it has offered baccalaureate degrees in Chemical, Civil, Electrical and Mechanical streams and has provided advanced education through M.Sc., M.Eng., Ph.D. and professional-diploma programs. Recently a baccalaureate program in Surveying Engineering was implemented, with the first graduates expected in 1981.

Organization

The Faculty of Engineering is comprised of four Departments that are responsible for teaching and research primarily in the four areas named above. The Common Core program, which undergraduates must take in their first two years, involves cooperation among these Departments. The senior administrative leadership is furnished by the Dean, the Associate Dean (Student Affairs) and the Associate Dean (Academic), the last of whom coordinates the offerings in the Common Core; there are four Department Heads who are responsible for the specialized education of senior undergraduates and graduate students in their respective areas. The Surveying Engineering program is administered through a formal Division of Surveying Engineering iln the Department of Civil Engineering.

Role

The Faculty's undergraduate degree is essentially a rigorous preparation that enables its recipients to pursue a vocation as Professional Engineers. The Canadian Accreditation Board reviews programs every five years to ensure that the proper elements of engineering education receive appropriate emphasis and to assess the quality of the Faculty. Undergraduate students must, therefore, meet national standards in order to prepare themselves for the jobs they will take after graduation.

At the graduate level, research is designed to lead or keep pace with rapid technological development and to cope with increasing sophistication in engineering design and analysis. The demands of a society trying to solve critical problems of advanced civilization and trying to enhance "the quality of life" are paramount in this effort. Hence, the interface between the University and industry is especially crucial to the pursuit of excellence in the Faculty of Engineering.

Student-Staff Data

In the five-year period between 1966 and 1971, enrolment grew from 300 to 600 full-time students and was matched by a corresponding growth in faculty and support staff. Enrolments nearly doubled again between 1971 and 1979, but growth in staff was only moderate, there being a combined total of 178 FTE academic and support staff in 1971, and 184.4 in 1979. There was actually a decline in support staff over the period. Enrolment is now limited to about 400 first-year students, with a total undergraduate capacity of 1,100. Quotas on students entering each of the streams in their third years force more than a few students to specialize in areas they would not choose. Electrical Engineering, in particular, has been the beneficiary of the practice of channelling students to areas where they can be accommodated. Any further growth in the Faculty will be constrained by limited space and facilities, although the recently approved addition to the Civil Engineering wing will alleviate the problem somewhat.

The population of full- and part-time graduate students has fluctuated but has averaged around 150 through the decade of the 70's. Increasingly, the Faculty has difficulty in attracting Canadian students to its programs, partly because stipends for graduate students cannot compete with salaries paid in the working world.

It should be noted that the economy of Alberta requires a large number of engineers and that the provincial universities are not filling this need. Roughly 20% of those licensed as professional engineers, geologists, and geophysicists each year have graduated from Alberta universities.

Research

National granting agencies have acknowledged the excellence of Calgary's academic engineers with awards exceeding the national average. Because the Faculty of Engineering is acutely conscious of professional and community needs, its research activities and its principal emphases are constantly changing as scientific and technological information proliferates. This process of constant change is vital to the quality of the programs offered and to the careers of the faculty members who must try to stay at the forefront of industrial needs and technological capacity. Engineering argues strongly that "contract" research just as much as, if not more than, research assisted by government grants, keeps faculty members abreast of the latest technological problems that need solving. They acknowledge, none the less, that there is potential for abuse with research contracts and that University policies on contracts need to be carefully implemented both by Department Heads and by members of the University's senior administration to ensure a balance between basic and mission-oriented research.

Observations and Recommendations

The Faculty of Engineering gives every appearance of being a very closely-knit, coherent unit, partly because all Departments participate in the Common Core curriculum and partly because there appears to be very little disagreement over goals and objectives across the Faculty. The integrity of the programs, the maintenance of standards, and the accomplishments of the faculty members themselves are, and perhaps ought to be, the envy of many other units on campus. Within the Faculty, there seems to be some consensus that Civil and Electrical are strong, dynamic departments, that Mechanical is rapidly improving, and that Chemical and Petroleum Engineering, while very good, has yet to realize its full potential. A dominant concern in the Faculty of Engineering is that teaching and research will deteriorate unless more space and more equipment are forthcoming. The need for space is especially acute in Mechanical Engineering which is trying to cope with double the number of students for which the facilities were designed, and in Chemical and Petroleum Engineering, which has been promised a laboratory wing since 1969.

Recommendation III.4.1

That the University continue to make the provision of adequate space and facilities to the Faculty of Engineering a priority.

* * *

Since the Faculty of Engineering has enormous opportunity for growth and development in the next ten years, the University is likely to be barraged by requests for new programs from numerous areas within the Faculty. It is incumbent upon the Faculty of Engineering and the University to determine which of the many possibilities for development should receive priority, as difficult as that task might be. The Faculty should be encouraged and supported in the extension of its activities, but extension might very well occur by capitalizing and developing on existing strengths, rather than by mounting totally new programs. Currently, a new program in Surveying Engineering has been approved and is in operation, though only at the undergraduate level; the expanded Civil Engineering wing is about to be built, though the old facilities need renovation; a program in Computer Engineering is being proposed in conjunction with the Department of Computer Science, and further developments in Computer Engineering are anticipated; there is serious talk of increased activity in Arctic Engineering, in Petroleum Engineering, and in Management Engineering, and of the need for initiatives for Native Students.

Recommendation III.4.2

> *That, consistent with the consolidation of established programs, the new thrusts in computer engineering and in petroleum engineering be supported by the University as particulary important responses to society's needs.*

Recomendation III.4.3

> *That, given the important connections between industry and faculties of engineering, the University increasingly attempt to meet staffing needs in Engineering with endowed Chairs and adjunct Professors.*

* * *

The Faculty of Engineering's responsibilities to the needs of society make contract research an important activity. However, opportunities may now exist for alternatives to the traditional way of combining the pedagogical and research activities of the engineering professor.

Recommendation III.4.4

> *That the development of the University Research Park and/or research institutes, be thoroughly examined as part of the University's development of a research strategy, with members of the Faculty of Engineering playing a prominent role in this examination.*

* * *

One of the principal concerns of the Faculty of Engineering is that there be amicable cooperation with other units with which engineers share common ground: primarily, Computer Science, Physics, Chemistry, Mathematics, Geology and Geophysics, and Geography. Unfortunately, relations between some of these units and Engineering sometimes have been strained. Engineers allege that the courses taught for engineering students are regarded by others as merely "service" courses, while those from other disciplines claim that Engineering professors meddle in their courses by dictating not just content but pedagogical techniques as well. Elsewhere, there is worry that the Faculty of Engineering increasingly encroaches on the academic domain belonging to others, and that arguments for teaching within the Faculty certain topics that could be taught without are spurious. If there is substance to this worry; if, for example, the existence of expertise and expensive laboratory facilities in cartography makes unnecessary the addition of staff and labs in cartography for the Surveying Engineering program, then the University will have to monitor new programs and requests for new staff with more vigilance.

Recommendation III.4.5

> *That, in order to maximize the use of existing resources, the Policy and Planning Committee and the Curriculum and Academic Review Committee assure GFC*

> *that there is no needless overlapping between initiatives sponsored by the Faculty of Engineering and the activities of other units, and vice versa.*

* * *

More flexible staffing policies might also promote dialogue and cooperation between Engineering and other units.

> Recommendation III.4.6
>
> *That the University study seriously the possibility of making joint appointments involving the Faculty of Engineering and other appropriate units.*

* * *

The Faculty of Engineering is sometimes perceived as being unduly autonomous. This perception is likely based on the fact that accreditation standards do not permit much room for options in undergraduate programs, and on the fact that few students from outside the Faculty take engineering courses. The Faculty's rapport with the rest of the University might be improved if it, like most other teaching units, were to develop "service" courses and were to provide the staff to teach them.

> Recommendation III.4.7
>
> *That the Faculty of Engineering consider offering more courses such as Engineering 481 (Technology and Society) in part to demonstrate to non-engineers its commitment to improving dialogue on campus.*

* * *

5. FACULTY OF ENVIRONMENTAL DESIGN

History

The starting point in the process which ultimately led to the establishment of the Faculty of Environmental Design was a report on the need for a school of architecture which was sent to the President of the University of Alberta by the Association of Architects in late 1965. In 1966, General Faculties Council endorsed the idea of a School of Architecture at The University of Calgary, and the Universities Coordinating Council established an advisory committee to recommend on the siting of such a school. Following a process of hearings, submissions and debate both within the university system and outside, the Universities' Commission announced in the Spring of 1969 the decision to locate the Faculty of Environmental Design at Calgary. The Faculty was formally established in 1971 to provide a professional graduate program. The Faculty obtained GFC approval for its program and development plan in January 1972, and enrolled its first-year class in the Fall of 1972.

Organization

There is no departmental structure in the Faculty of Environmental Design. Program Directors are appointed in Architecture, Environmental Science and Urbanism. The Directors are responsible for academic standards, student relations, and liaison with professional accrediting bodies. The Faculty shares some common interests and objectives with the Kananaskis Centre for Environmental Research.

Role

Three general aspects of the role of the Faculty of Environmental Design are:

1. To continue to provide an interdisciplinary and integrated approach to teaching and research in the new and

expanding field of environmental design through three existing major programs: architecture, environmental science, and urbanism.

2. To respond, in curriculum and staffing, to the accreditation criteria of the Alberta Association of Architects and the Canadian Institute of Planners as far as Architecture and Urbanism graduates respectively are concerned.

3. To continue to contribute knowledge to these professions, the public at large and the University community through scholarship and research, community action and mid-career educational opportunities.

Instructional Programs

There are three streams in the program: Architecture, Urbanism, and Environmental Science. A fourth, Industrial Design, has been approved by the Department of Advanced Education and Manpower but has not yet been funded. Each existing stream has four areas of concentrated studies, resulting in twelve areas in total. Students must take some courses with students from each stream, thus providing the opportunity for interdisciplinary integration. If the opportunity arises, the current program would be modified to expand urban development studies to regional development and planning. The Faculty recently hired an Associate Professor with expertise in this subject. Also, urbanism studies would expand in the area of urban design and development, and to this end the Faculty is presently exploring the feasibility of securing funding for a Chair in Urban Development Studies.

Extensive offerings are made through Continuing Education. These include professional development programs and general interest courses dealing with the environment.

Public Service Programs

Faculty members are heavily involved in professional community and environmental organizations. With their expertise, as one would expect, they serve groups and society at large at the local, provincial, national and international levels.

Many requests come to the Faculty for advice and guidance on community planning, architecture, and environmental matters. The demand for this type of activity has led to consideration being given to whether a more formally structured unit in the Faculty should be set up to manage such requests.

Developing Programs

Industrial Design will be another division of the Faculty of Environmental Design. It is estimated that 25 students will be in the program and that 4 FTE academic and 1.5 FTE support staff will be required. This program involves the Department of Civil Engineering and the Faculty of Management and will require space. Discussions are underway respecting part-time education programs for those presently employed and wishing to upgrade their qualifications (e.g. from para-professional to professional accreditation by the Canadian Institute of Planners). Another program currently referred to as a "Masters of Development Administration" is being discussed with the Faculty of Management and will presumably come foward as a joint proposal. It is intended to bring business and management courses together with architecture, planning and environmental offerings.

Student-Staff Data

The Faculty consists of 21.3 FTE academic staff in 1979 of which 18 are full-time regular staff. Two joint appointments are shared with Biology and one with Continuing Education. There are 10.5 support staff. In Fall 1979 there were 163 full-time students and 21 part-time students enrolled. Typically there are 220 applicants for entry into the program, of which 125 are qualified, 50 are accepted and at least 40 of them register in any given year. Of the students who register, 25 percent are from Alberta, a proportion that approximates that of the Alberta applicants. The grade point average of the students accepted was about 3.4 in the Fall 1979. Employment of students has not been a problem; they start at good salaries in a broad range of positions.

Research

As the Faculty is dedicated to applied studies, much research activity involves leadership roles within community, professional and environmental groups. The product of such activity is a brief, plan, or perhaps simply a consensus. These do not easily qualify for publication in traditional scholarly journals and the output from these activities tends to underplay the research of the Faculty members involved. Many of the faculty members in environmental science, urbanism and, to a lesser extent, architecture, make substantial contributions in the form of articles and books.

As a step toward the eventual development of a Ph.D. program, the Faculty wishes to develop thesis-based, M.A. and M.Sc. degrees through the Faculty of Graduate Studies. It has been suggested that the administration of the Committee on Resources and the Environment (CRE) Program, which currently offers interdisciplinary, thesis-based Master's degrees, would provide the Faculty with a mechanism for demonstrating its ability to manage thesis programs and develop Doctoral work.

Observations and Recommendations

The Faculty is small and feels the pressure of meeting the institutional requirements of a Faculty (committees, councils, administration, etc.), and at the same time offering an interdisciplinary graduate program. The statistical data for the Faculty indicate a section size averaging 6.2 and an instructional workload of 24.3 section hours per week for each FTE faculty member. These figures, when compared to the average institutional section size of 18 and workload of 11.8, clearly indicate the different nature of the program in this Faculty, which has only graduate students. The teaching of small numbers in studio settings requires a large input of hours by faculty members similar to the clinical setting in Health Sciences.

Recommendation III.5.1

> *That OIR continue to develop a program analysis for the Faculty of Environmental Design so that appropriate indicators of resource needs and resource utilization are available to the University.*

* * *

The Faculty of Environmental Design has the only graduate programs not directly controlled by the Faculty of Graduate Studies. The latter Faculty manages large budgets for fee remission and student support in the form of scholarships and research assistantships. These funds, plus the teaching assistantships, justified on the basis of undergraduate teaching loads and budgetted for in those teaching units, provide a resource pool supporting students in graduate programs other than those in the Faculty of Environmental Design. The complex issue of equity between the two groups of graduate students has been a concern for some time.

Recommendation III.5.2

> *That efforts continue to provide equal opportunities for graduate student support regardless of administrative jurisdiction.*

* * *

The grading system in the Faculty of Environmental Design is based on written evaluations. Following the evaluations, remedial programs are developed for those students who fail to satisfy all course objectives. The grading system itself is not considered to be too time-consuming but the remedial activity seems to require too much faculty time.

Recommendation III.5.3

That the grading system and related remedial programs be re-examined with a view to finding less time consuming approaches to meeting the objectives.

* * *

In many respects the environmental studies of the Faculty of Environmental Design, the Kananaskis Centre for Environmental Research, and the Committee on Resources and the Environment Program are totally uncoordinated. The University may be duplicating facilities and efforts unnecessarily and receiving less than optimal effort in this important area.

Recommendation III.5.4

That the Vice-President (Research), with the advice of external assessors, examine whether the resources currently being allocated to environmental education by the Faculty of Environmental Design, the Kananaskis Centre and the CRE Program, could be used more effectively if these units were integrated.

* * *

Certain problems encountered in the Faculty of Environmental Design are common to those experienced by many other Faculties. While no specific recommendations are made here, some points are alluded to briefly.

The small number of faculty members in Environmental Design and the coverage of the twelve areas in the program result in a veneer without critical mass or substitutability among faculty members. This causes severe problems when individuals are on sabbatical leave and substitutes are not provided or cannot be found.

Research expectations in the Faculty are higher than at other comparable Canadian schools or Faculties. It is felt that older Faculties of a similar type took a much longer period to develop research activity to the level expected here. In addition, the nature of the research output, at least in the case of some faculty members, is of a non-traditional type.

The Faculty has considerable contact with community, professional groups and individuals seeking advice on and assistance in environmental and planning matters. This activity is important from the viewpoint of Faculty growth and development as well as meeting a societal need. At the present time the activity is managed informally with the result that some individuals are burdened with a disproportionate number of requests and faculty members are not always certain that their time is best spent attending to these matters.

The reader is also referred to Chapter IV, which deals with various matters which transcend individual Faculties.

6. FACULTY OF FINE ARTS

History

In 1966, General Faculties Council recommended that the Department of Fine Arts and Fine Arts Education be reconstituted as a Faculty of Fine Arts. Four-year programs in Art, Drama and Music were approved by GFC in 1967 and were introduced by the Faculty in 1968. Master's programs in Art, Drama and Music were approved in the Fall of 1978.

Organization

The Faculty of Fine Arts is comprised of the Departments of Art, Drama and Music, and is administered by the Dean, an Associate Dean, two Assistant Deans and the Heads of the three Departments. The Assistant Deans are responsible for student affairs, and for performances, exhibitions and productions, respectively. In addition, there is a part-time Physical Planning Officer.

Role

The role of the Faculty of Fine Arts is summarized by the following excerpt from the Faculty's Development Plan:

> The Faculty of Fine Arts believes that it must provide the opportunity for the dissemination of knowledge of the arts in order to achieve a wider and deeper level of understanding, that it must provide for both faculty and students the climate and facilities for exploration, research and the expansion of knowledge, and that it must share its collective skills with those who wish to be active performers in any area of its different disciplines.

In carrying out the above role, the Faculty provides educational opportunities for professional artists, artist-scholars, artist-teachers, arts managers, arts technologists, semi-professional artists, performing amateurs and those interested in obtaining an understanding and appreciation for the various arts forms.

Programs

The Faculty of Fine Arts offers B.F.A. (Art), B.A. (Art History), B.F.A. (Drama), and B.Mus. degrees. Students in programs leading to the B.Mus. can pursue majors in school music, performance, theory and composition, history and literature or specially arranged programs designed as majors in Music. At the graduate level, the Faculty has approval to offer M.F.A. programs in the visual arts, M.A. programs in dramatic literature, M.Mus. programs in theory and compositon and in school music and M.A. programs in musicology.

Student-Staff Data

The full-time student enrolment in Fall 1979 was 367. Except for a decline to the 350 level in the years 1977 and 1978, the enrolment in the Faculty has remained constant at about 385 full-time students since 1972. During this same period, the part-time enrolment in the Faculty has increased fairly steadily from 66 in 1972 to 126 in 1979. The weekly student hours taught by the Faculty have declined from 15,487 in the 1972-73 year to about the 11,600 level in 1979. Full-time equivalent academic staff numbers increased from 68.1 in 1972-73 to 87.2 in the Fall 1979. The recently-introduced programs at the Master's level have attracted a total of 11 full-time graduate students as of Fall 1979.

Scholarly Activities

Scholarship in the fine arts encompasses a broad spectrum of activities such as direction, performance, creation of objects of art and the composition of music as well as such pursuits as critical writing and the study of the history of the arts. Staff members in the Faculty of Fine Arts already make substantial contributions in many of these areas on a local, national and international level. The Faculty is not now as strong in the more academic areas as it perhaps should be. Recent graduate program approvals should, however, provide impetus for a continued shift in emphasis in this direction. If this occurs, there should be an accompanying increase in the current low level of external funding for the support of scholarly work.

Observations and Recommendations

The Departments of Music and Drama are now housed in Calgary Hall and the Department of Art is housed on the 12th and 13th floors of the Social Sciences Building, the 6th floor of the Earth Sciences Building and on the 6th floor of the Mathematical Sciences Building. Much of the above space allocated to the Faculty is not well suited to its needs. For example, music studios are not sound-proofed, rehearsal space used by the Department of Drama is inadequate, sculpture studios used by the Department of Art are overcrowded, many of the staff offices used by members of the Department of Drama are unsuitable. The Faculty of Fine Arts as a whole is less cohesive and operates at lower efficiency than it might otherwise because it is unattractively and unsuitably housed.

Recommendation III.6.1

That the University proceed as quickly as possible with plans to accommodate the Faculty of Fine Arts in a single location that is suitable to its needs.

* * *

Other University facilities such as the Nickle Arts Museum, the University Theatre and the Reeve Theatre, which is now under construction, should have strong links with the

Faculty of Fine Arts as well as with other academic units within the University. Careful planning will be necessary to foster and maintain these links so that the potential benefits to academic programs are realized. Thus, in addition to giving immediate assistance to the Faculty of Fine Arts by assigning a very high priority to its calls for teaching, rehearsal, performance and exhibition space in University facilities, the University should initiate a review of long-term plans for use of areas such as the University Theatre, the Reeve Theatre and the Nickle Arts Museum.

> Recommendation III.6.2
>
> *That the University establish a committee to formulate plans for the management of the University Theatre, the Reeve Theatre and the Nickle Arts Museum, which will allow these facilities to be used to support academic programs, particularly those in the Faculty of Fine Arts, to the fullest possible extent.*

* * *

In the early 70s about one-half of the 15,000 weekly student hours taught by the Faculty were associated with students registered outside the Faculty. Since then the number of weekly student hours taught by the Faculty of Fine Arts has declined to about 11,600. Of these, about 2,000 are associated with students registered in the Faculty of Education, about 2,000 involve students registered in University College and about 800 registered elsewhere in the University. It is also interesting to note that nearly 7 out of every 8 WSH taken by students registered in the Faculty of Fine Arts are taught by the Faculty. This is substantially above the average for the other Faculties. Despite the fact that the sum of full-time and part-time enrolment in the Faculty has increased from about 450 in 1972-73 to 500 in 1979-80, and that staff have fairly heavy teaching loads because there is a considerable amount of individual instruction, the substantial decline in participation in courses offered by the Faculty may make it difficult to argue successfully for an increase in staff numbers to mount programs in such potentially attractive areas as dance, fine arts administration and fine arts therapy.

Recommendation III.6.3

> *That the Faculty of Fine Arts establish and maintain a plan for staffing which allows for some accommodation in undergraduate program direction but which is designed primarily to augment existing strength at the undergraduate and graduate levels. In establishing such a plan, consideration should be given to the use of teaching methods that would decrease the amount of individual instruction now offered by the Faculty.*

* * *

In addition to the education of specialists in the performing and academic areas of the arts, the Faculty has a role in the education of artist-teachers, semi-professional artists and performing amateurs and in providing opportunities for others in the University community to gain a basic understanding of and appreciation for the various art forms. Because of the historical development of the Faculty of Fine Arts, there are close links between it and the Faculty of Education and it is imperative that these close links be maintained.

Recommendation III.6.4

> *That the Faculty of Fine Arts continue to work closely with the Faculty of Education in improving the quality of existing programs in fine arts education and in developing new programs in such areas as the education of handicapped children.*

* * *

Course enrolment statistics indicate that the Faculty of Fine Arts is not as successful as it might be in attracting students registered elsewhere in the University into courses that foster an understanding of and an appreciation for the fine arts. At the same time, the degree programs in art, art history, drama and music are highly specialized and offer little opportunity for students registered in them to participate in courses in the Humanities and Social Sciences. These two factors contribute to an isolation of the Faculty of Fine Arts from the rest of the University community and measures should be taken to correct this undesirable situation.

Recommendation III.6.5

That the Faculty of Fine Arts enter into discussions with other Faculties in the University with a view to making such changes in the scheduling and content of arts interest and appreciation courses as are necessary to make them more attractive to students registered in other Faculties, and to making some adjustments in its own degree programs to allow students registered in them a broader choice of courses outside the Faculty of Fine Arts.

* * *

Staff members in the Faculty have, on an annual basis, been involved in the supervision of 3 to 4 special case Master's level students specializing in areas in the Faculty of Fine Arts and about 14 to 18 Master's level students specializing in areas in the Faculty of Education. The recently approved Master's level programs in each Department in the Faculty of Fine Arts have already attracted 11 full-time graduate students and it is expected that this number will grow substantially in the future. Unfortunately, the graduate programs in performance areas in the Departments of Drama and Music have not yet been approved, thus depriving students and staff an opportunity to work together at the graduate level.

Recommendation III.6.6

That the University continue to press the case for graduate program authorization in the areas that await approval.

* * *

The University of Calgary serves a large urban population and should play a leadership role in developing and improving cultural amenities in southern Alberta, particularly in the City of Calgary. The Faculty of Fine Arts is now one of the important links between the University and the community and every effort should be made to maintain and strengthen this link. Improved facilities on campus, graduate program authorization in the performance areas, and an effective public relations group within the Faculty would certainly help in this regard. Most important of all, enthusiastic staff participation in the performance areas and in committee work in the community is essential.

Recommendation III.6.7

That the Faculty of Fine Arts and the University community as a whole continue to recognize performance in art, drama and music and involvement in artistic enterprises as a legitimate form of scholarly work for staff assessment purposes and encourage such activities in every possible way.

* * *

Finally, it should be noted that the Faculty of Fine Arts at The University of Calgary is but one of a number of institutions involved in arts education in southern Alberta. The quality and effectiveness of the regional effort as a whole can be enhanced by communication and cooperation among these institutions.

Recommendation III.6.8

That the Faculty of Fine Arts continue to strengthen ties with other institutions such as the Alberta College of Art, Mount Royal College and the Banff Centre for Continuing Education with the view to participating in such co-operative schemes as arranging for visiting performers and visiting scholars.

* * *

7. FACULTY OF GRADUATE STUDIES

History

A Faculty of Graduate Studies was established on the Calgary campus in October, 1964, although graduate work had been carried out previous to this date (as early as the late 1950's) under the Faculty of Graduate Studies of the University of Alberta. In its first year of operation the Graduate Faculty in Calgary functioned under a committee chaired by the University President. In 1965, an interim Dean was appointed to the Faculty and an Interim Council of the Faculty of Graduate Studies was formed. With the granting of full autonomy to the University in April, 1966, a full-time Dean was named and, in September of the same year, a new Faculty Council was appointed. Graduate program offerings have grown rapidly, and Master's degree programs are currently offered in some 35 major fields, while Doctor of Philosophy programs have been introduced under the authority of the Faculty in more than 20 major fields. More than 2,700 Master's degrees and almost 500 Ph.D. degrees have been awarded through the Faculty of Graduate Studies.

Organization

The academic administration of the Faculty of Graduate Studies is carried out by the Dean and three Associate Deans. The Council of the Faculty of Graduate Studies is comprised, in the majority, of the Heads of Departments which are authorized to offer graduate programs through this Faculty, or the Departmental respresentative responsible for the administration of graduate work in those units. The academic assessment and approval of graduate development plans, as well as the interrelationship between the current and future programs, is a responsibility of the Graduate Faculty Council. Graduate scholarships and fellowships are awarded by the Graduate Scholarship Committee of the Faculty of Graduate Studies. The Faculty also offers Research Assistantships and is responsible for the setting of regulations and guidelines for Teaching Assistantships which are funded through the teaching Departments/Faculties.

The resources for the implementation of all graduate programs come from the teaching units where the staff, space and support requirements are provided.

Role

The Faculty of Graduate Studies is responsible for post-baccalaureate degree programs at The University of Calgary with the exception of the Master's degree program in Environmental Design, and those professional areas where students may be admitted to degrees other than baccalaureate without having completed a baccalaureate degree (e.g. Doctor of Medicine). The graduate degree programs within the Faculty cover areas of both advanced graduate education and professional training. These programs are designed to provide the student with one or both of research experience and exposure to the requirements of advanced professional competence. The major continuing concern of the Faculty of Graduate Studies is the maintenance of uniformly high standards across graduate programs by the setting of admission standards and the establishment of degree requirements for graduate programs in 31 academic units. In the final analysis, it is probably the source of most of the conflicts that arise between the Faculty and its constituent parts.

The principal objective of the Faculty is to provide society with a supply of scholars and well-educated professionals who have experienced the challenge of understanding and appreciation at or near the frontiers of knowledge. The maintenance of quality is reflected in the admissions policies of the Faculty.

Programs

A complete list of all graduate programs currently approved and offered through the Faculty of Graduate Studies is found in Table 10 (overleaf). The following new graduate programs are at various stages of development and approval:

Master of Communication Studies:	institutional approval; proposal under review by AAEM
Master of Fine Arts (Theatre):	
Master of Music (Applied Music):	
Master of Nursing:	approved in principle by AAEM
Master of Physical Education:	
Ph.D. in Educational Curriculum and Instruction (Language Arts):	

Ph.D. in Social Welfare Studies: Letter of Intent submitted; formal program proposal being developed.

Master of Arts (Religious Studies): Letter of Intent submitted.

Enrolment

Over the past five years full- and part-time enrolment in the Faculty has grown moderately from 1,123 to 1,277 (Fall 1979), of which 770 were full-time students. Enrolment trends over the next five years are likely to depend strongly on which of the following conditions will prevail:

(a) continuation of the present public and government conviction that there is an "over-production" of graduates with advanced degrees, leading to stabilization of the current level of full-time students or a slow decline, accompanied by a modest increase in part-time students, leading to some 1,400 - 1,500 graduate students in total;

(b) concern over impending manpower shortages in the mid-to-late '80's, coupled with greater emphasis by the University on part-time programs, leading to an increase in full-time students to around 900, and part-

TABLE 10

GRADUATE DEGREES OFFERED THROUGH THE FACULTY OF GRADUATE STUDIES (1980)

Degree Title	Major/Specialization
MASTER OF ARTS	Anthropology, Archaeology, Dramatic Literature, Economics, Educational Administration, Educational Curriculum and Instruction, Educational Foundations, English, Geography, Germanic and Slavic Studies, History, Linguistics, Musicology, Philosophy, Political Science, Rehabilitation Studies, Resources and the Environment, Romance Studies, Sociology, Social Welfare
MASTER OF ECONOMICS	
MASTER OF EDUCATION	Educational Administration, Educational Curriculum and Instruction, Educational Foundations, Educational Psychology
MASTER OF ENGINEERING	Chemical, Civil, Electrical, Mechanical
MASTER OF SCIENCE IN ENGINEERING	Chemical, Civil, Electrical, Mechanical
MASTER OF FINE ARTS	Visual Arts (Painting, Ceramics, Graphics, Sculpture, Drawing, Photography and Intermedia)
MASTER OF MANAGEMENT STUDIES	Accounting and Information Systems, Entrepreneurship and Small Business, Generalist Option, Management of Financial Resources, Management of Human Resources, Management of Public Institutions, Marketing and Distribution Systems, Production and Operations Management
MASTER OF MUSIC	Composition, School Music
MASTER OF SCIENCE	Biology, Chemistry, Computer Science, Educational Curriculum and Instruction, Educational Psychology, Geography, Geology, Mathematics and Statistics, Medical Science, Physics, Psychology, Rehabilitation Studies, Resources and the Environment
MASTER OF SOCIAL WORK	
DOCTOR OF PHILOSOPHY	Archaeology, Biology, Chemical Engineering, Chemistry, Civil Engineering, Economics, Educational Administration, Educational Foundations, Educational Psychology, Electrical Engineering, English, Geography, Geology, Mathematics and Statistics, Mechanical Engineering, Medical Sciences, Philosophy, Physics, Political Sciences, Psychology, Rehabilitation Studies, Sociology.

time students to 1,000, for an estimated total of 1,900 by 1984.

An increasing percentage of the Alberta population now holds baccalaureate degrees, thus providing a potentially larger clientele for either full-time or part-time graduate programs.

Observations and Recommendations

During 1978-79 the Council of the Faculty of Graduate Studies and the General Faculties Council approved a basic format for course-based M.A. and M.Sc. degrees without any residence requirement. These programs are likely to be of interest to students who wish to pursue an advanced degree on a part-time basis, and could lead to an increase in enrolment by an estimated 500 students over the next three to five years. Eight specific proposals for course-based Master's degrees in the new format were approved for 1980/81. As the number of these programs grows, new demands will undoubtedly be made on faculty members as far as graduate level instruction is concerned. In particular, many courses will probably have to be offered at times and in locations which deviate from the traditional pattern, and academic units will be required to produce long-range plans for the scheduling of certain graduate courses over a number of years so that part-time students can indeed complete their degrees on this basis.

Recommendation III.7.1

That the Faculty of Graduate Studies place high priority on the immediate development of part-time Master's programs in disciplines where the demand warrants and the staff resources are available.

* * *

Traditionally, the University has offered most of its graduate programs only on campus, but there are now many factors which suggest that we re-think this approach. The removal of the full-time study, research and thesis requirement from one M.A./M.Sc. route will undoubtedly make these degree programs more attractive to people fully employed and well advanced in various careers. In addition, there is evidence of growing demand for the offering of professionally-based Master's degrees (M.Ed., M.S.W., etc.) at locations other than on The University of Calgary campus. In some instances universities based outside of the Province of Alberta have already presented proposals for such degree programs to be offered at various smaller centres in Alberta, in response to local demand. Local groups have not perceived a willingness on the part of the Alberta universities to respond to such off-campus requests. While great care will be required in responding to such off-campus demands, in order to maintain the quality of graduate degrees and to ensure the economic viability of such ventures, the image of the University could be greatly enhanced through more off-campus offerings, both in downtown Calgary and in other centres in southern Alberta. (See Chapter IV, Section 7).

Recommendation III.7.2

That the Faculty of Graduate Studies provide leadership in formulating a plan for increased graduate course and program offerings off-campus, where these can be justified, both in Calgary and in other selected centres in Alberta.

* * *

Recommendation III.7.3

That, as part of its overall study of the need for a downtown centre, the

University give attention to means of facilitating off-campus graduate course and program offerings.

* * *

Recommendation III.7.4

That the Dean of the Faculty of Graduate Studies discuss graduate course offerings outside of Calgary with the Dean of Graduate Studies at the University of Alberta, to establish whether cooperative ventures might meet the needs and legitimate aspirations of individuals in other Alberta population centres who are interested in advanced level work.

* * *

It is becoming clear that part of the demand for university graduate education necessitates the grouping of related disciplines in order to deal with pressing research problems at the graduate level, e.g. communication studies, rehabilitation studies, computer engineering, biomechanics, etc. This multi-disciplinary approach requires very careful planning if it is to be successful in overcoming some of the traditional barriers that exist between disciplinary areas. Multi-disciplinary graduate programs could be formalized through the establishment of separately-administered institutes or centres, or they could be built on the existing Departments. In order to minimize the competition between units and to ensure the proper weighing of relative priorities in the competition for resources, such graduate programs should be based on a group of existing units.

Recommendation III.7.5

That multi-disciplinary graduate programs be based on existing departmental strengths and be managed through the establishment of appropriate committees

> *under the authority of, and with scholarship and fellowship funding from, the Faculty of Graduate Studies.*

* * *

Since universities are currently suffering from the public perception that too many graduates with advanced degrees were being produced, an "over-correction" has undoubtedly occurred and Canada will face severe manpower shortages in the sciences and in engineering as early as the mid-1980's. When these occur, the universities are likely to be blamed. Highly qualified manpower in such areas as engineering, computer science, geophysics and management is already in short supply in Alberta, and this situation shows every sign of worsening. The University of Calgary should give high priority to increasing its capacity to produce graduates to meet such shortages and, in particular, should encourage Canadian students to enter these fields. While the potential dangers of outside influence, of earmarked grants and specific manpower production thrusts are recognized, the University must continue to address the overall balance of the institution through its budget allocations.

> Recommendation III.7.6
>
> *That the University ensure that research granting agencies appreciate the impending shortage of advanced level graduates in Alberta and in Canada, and encourage them to maintain, and increase if possible, resource allocations which would stimulate increased enrolment in those areas where potential shortfalls in highly qualified manpower can be projected to occur during the 1980's.*

* * *

The rapid development of The University of Calgary saw increasing numbers of post-doctoral fellows and visiting scholars coming to this campus. The levelling off of our period of growth will make us more dependent on arrangements such as these to bring "new blood" and young people into the institution. Appropriate formal recognition by the University should be accorded to this approach, and the Faculty of Graduate Studies is a logical unit to coordinate this type of advanced study.

> Recommendation III.7.7
>
> *That the Faculty of Graduate Studies prepare for consideration by GFC a proposal outlining how a broadening of its mandate to include post-doctoral fellows, visiting scholars, etc., would benefit the University.*

* * *

The importance of quality-control in graduate programs has already been discussed in this section, with reference to the overall role of the Faculty of Graduate Studies. It is crucial that all of our graduate programs are well-regarded by the employers of our graduates and by disciplinary experts at other universities. The Dean should be encouraged to use the peer review process to maintain and enhance the quality of graduate studies programs at the University.

> Recommendation III.7.8
>
> *That maintenance of quality in established graduate programs continue to be monitored through peer review by bringing disciplinary experts to this campus as advisors to the Dean. Failure to meet standards should lead to a suspension of further admissions until the problems have been rectified, or to a recommendation that a phased termination of the program be considered.*

* * *

By their very nature graduate studies programs tend to be extremely specialized. From time to time a given university may find that, notwithstanding the expertise on its faculty and the availability of research facilities on its campus, a particular graduate student or group of students would benefit greatly from even a limited exposure to faculty or specialized equipment at another university. We believe that a cooperative effort among graduate schools in western Canada could do much to enhance the graduate programs offered, and the Faculty of Graduate Studies should be encouraged to provide leadership in this area.

Recommendation III.7.9

That the Faculty of Graduate Studies be encouraged to continue to participate in the development of a program of advanced level short courses which might be developed on a western Canadian regional basis, thereby making available some staff expertise and facilities to graduate students generally through the concept of "exchange graduate students".

* * *

Generally the establishment of a graduate program in an academic unit follows a well-developed baccalaureate program. Faculty members recruited to staff the undergraduate program are appointed with the expectation that, in addition to their undergraduate teaching and related responsibilities, they will engage in research, scholarship or some form of creative activity, as well as engage in service contributions to the University, the community and/or their profession. Once a sufficient "intellectual mass" has been assembled, it is logical to move toward the full exploitation of that expertise by providing opportunities for graduate study at least up to the Master's level. Even if such a program has a fairly low enrolment and is restricted in breadth, it can have an enormous effect on the quality of faculty members recruited and on the ongoing revitalization of the academic unit.

Research-based doctoral programs demand the highest quality faculty, facilities and equipment, as well as a background of highly satisfactory experience with a well-developed research-based Master's program. It would normally be expected that an academic unit presenting a proposal for a new doctoral program would, by virtue of its previous experience with a Master's program, not require incremental funding for academic or support staff or equipment to implement it. An exception might be where there is a very large Master's enrolment which has already used up all the faculty time available for student supervision.

> Recommendation III.7.10
>
> *That the offering of a graduate program at the Master's level, although possibly only in restricted area(s) and to a limited number of students, be considered the legitimate aspiration of every academic unit at The University of Calgary.*

* * *

> Recommendation III.7.11
>
> *That proposals to offer new doctoral programs normally be based on the existing staff and other resources of the unit, and not ordinarily include requests for incremental funding.*

* * *

Throughout the development of graduate studies at The University of Calgary the prerogative of the Dean of the Faculty of Graduate Studies has been exercised with respect to the admission of "special case" Ph.D. students from time to time in Departments/Faculties where no formal doctoral program exists. As exceptional cases, these have required a "perfect fit" between the proposed supervisor, the proposed graduate student and the proposed project, and have only been approved where the prospective student was outstanding.

Furthermore, these cases have only been approved where the Department concerned has already established a good performance record by means of an approved Master's program. These requirements have not always been understood by the University community.

Recommendation III.7.12

> *That the admission of a small number of exceptional students to graduate degree work in areas where no approved program exists continue, and that admission continue to be subject to the case-by-case approval of the Dean of Graduate Studies, on the basis of an individual proposal.*

* * *

As the current situation now stands, universities are not attracting the best Canadian students into graduate studies because potential graduate students see the opportunity costs of graduate school as too high in the short run, and share a wide perception that graduate school will not, even in the long run, enhance their careers. If it is agreed that there is a societal need to admit Canada's best minds to graduate programs, governments must provide realistic material incentives which demonstrate that society wants the best undergraduates to go on to graduate studies. This issue is referred to also in Chapters I and IV.

Recommendation III.7.13

> *That governments, funding agencies and universities give high priority to the enhancement of scholarship and fellowship programs for graduate students.*

* * *

8. FACULTY OF HUMANITIES

History

In the Fall of 1975, General Faculties Council approved the division of the Faculty of Arts and Science into University College and three Faculties, Humanities, Science and Social Sciences, effective April, 1976. The Faculty of Humanities initially consisted of the Departments of Classics, English, Germanic and Slavic Studies, Philosophy, Religious Studies (which attained Departmental status in April, 1976) and Romance Studies. The French Centre, which offers non-credit language courses, was made part of the Faculty in December, 1976, and was transferred to the Faculty of Continuing Education in July, 1979.

Organization

The honors and major programs in the Faculty of Humanities are under the jurisdiction of an administrative group that consists of a Dean and Associate Dean, an Assistant Dean and six Department Heads. The approved graduate programs in the Departments of English, Germanic and Slavic Studies, Philosophy and Romance Studies are administered by the Departments through the Faculty of Graduate Studies.

Role

The role of the Faculty is outlined in its Development Plan as follows:

> The study and teaching of the Humanities has historically been an important part of the core of a university curriculum. A major role of the Faculty of Humanities is to provide advanced study of: the languages and literatures of the world, the historic unfolding of the great civilizations and their systems of thought, the logical foundations of critical reason, and the structure of scientific, philosophical and religious thought. Its aim in

this study is to enlarge the understanding, enhance the sensibility and refine the human spirit. These are lofty though traditional objectives which no university will achieve perfectly, but which no university will dare abandon so long as it conceives of itself as a significant and humane social and cultural force.

It is essential therefore that the Faculty of Humanities retain, and where necessary enlarge upon, the capability to offer majors, honors and graduate programs of the highest quality in as many areas as possible of the subjects that fall within this mandate.

In a more practical sense, humane education offers its graduates:

1. Preparation for entrance into the teaching profession at all levels and to certain professional Faculties such as Law.

2. Somewhat more general preparation for careers in which most or all career-specific training is provided by the employer. One thinks for example of broadcasting; the arts; many kinds and aspects of business; and several sectors of the public service.

3. Most generally of all, a preparation for any career, profession or way of life in which literate and reflective good sense, critical and disciplined discernment, and the quiet confidence of wide learning are the *sine qua non* of lasting success. The language training, offered by five of the six humanities departments, will be an increasingly important aspect of any complete education in the future.

Programs and Courses

The Faculty of Humanities offers honors programs in Greek and Latin, Classical History and Archaeology, Classical and Early Christian studies; major programs in Latin and Greek, Classical History and Civilization; honors and major programs in English, German, Russian, Philosophy, Religious Studies, French and Spanish; and minor programs in Romance

Studies, Chinese, Religious Studies, Literature, and in any of the major fields listed above. At the graduate level, the Faculty offers Master's programs in English, German, Philosophy, French Language and Literature, French-Canadian Literature, Hispanic Language and Literatures and Comparative Literatures, and Doctoral programs in English Literature and Philosophy. The Faculty also offers Ukrainian, Italian and Portugese language courses, a course in the biomedical ethics area under a Faculty course designation, and is involved in the Interdisciplinary Studies program offered under the direction of University College.

Student-Staff Data

The increase in full-time equivalent academic staff in the disciplines under the jurisdiction of the Faculty of Humanities from 100.6 in 1972-73 to 118.0 in 1979-80 has been paralleled by an increase in weekly student hours from 17,351 in 1972-73 to 20,227 in Fall, 1979. The full-time enrolment in the 20 course programs in the Faculty rose from 161 in 1972-73 to a high of 184 in 1975, declined to a low of 139 in 1978 and increased again to 162 in Fall of 1979. Over the same period the part-time enrolment in the 20-course program increased fron 17 to 36. The number of full-time and part-time graduate students associated with the Faculty has remained essentially constant at 60 and 20 respectively since 1972-73.

Research

A recent review of Departments conducted by external assessors indicates that the majority of the staff members in the Faculty of Humanities are active scholars and that both the quality and the quantity of research and other creative work are at a very acceptable level. The few faculty members who do apply for research funds in national competitions have been fairly successful. However, the total amount of external research support attracted by the Faculty is still rather small.

Observations and Recommendations

Students registered in degree programs in the Faculty of Humanities account for only a small portion of weekly student hours taught by the Faculty which now plays a significant part in the education of other students enrolled in the University. Since most of the students taught by the Faculty are enrolled in 200- and 300-level courses and, since a significant number of these have section sizes that are larger than is pedagogicaly desirable, the Faculty has an opportunity to effect improvements that could enhance its role within the University.

Recommendation III.8.1

That plans to reduce section sizes in 200- and 300-level courses be accelerated and the resulting increased number of sections be scheduled at times that are as convenient as possible for students.

* * *

The graduation requirements listed for the Faculty of Humanities in the 1980-81 University Calendar include the requirement that four full-course equivalents must be taken outside of the Faculty, and state, "These should include at least one full-course equivalent from each of the Faculties of Science and Social Sciences. . . ." We understand that students in the Faculty of Humanities are thus encouraged to take some science courses, but not required to do so. It is difficult to understand how any individual in our technologically oriented society can be considered adequately educated without some knowledge of science and scientific thinking.

Recommendation III.8.2

That the Faculty of Humanities consider requiring that each of its students complete at least one full-course equivalent in one of the scientific disciplines.

* * *

The Religious Studies Department has six full-time staff positions. One of the six, a position in Christian Studies, has been externally funded for a number of years and in addition, a campaign is now underway to establish a Chair in Christian Thought. The Religious Studies group is faced with the problem of large sections and heavy teaching loads and is smaller than is desirable from the point of view of functioning as a full Department within the University.

Recommendation III.8.3

That the staff in the Religious Studies Department be increased from the present six to at least eight regular full-time members.

* * *

Despite the fact that weekly student hours in the Faculty of Humanities have increased in the past few years, weekly student hours in the Department of Philosophy have declined. In part, this may be due to the increasing popularity of programs in Religious Studies and, in part, to the relaxation of course requirements by the Faculty of Management. The Faculty of Humanities should make every effort to play an increasing role in the education of professionals by offering attractive options.

Recommendation III.8.4

That the Department of Philosophy proceed as quickly as possible with plans to develop courses that would be of *interest to students in the professional Faculties. Since such courses might well be in ethics, an effort should be made to maintain staff strength in that area.*

* * *

General Faculties Council has approved a recommendation that either passing the Effective Writing Test or obtaining a grade of at least C- in any junior level half or full course in English is necessary to satisfy the Effective Writing requirement. This move, although offering an opportunity to enhance the Faculty's role within the University, is contributing to increased teaching loads in the Department of English.

Recommendation III.8.5

That the University carefully monitor enrolments in 200-level English courses and attempt to provide such teaching resources as are necessary to ensure the success of the alternate route of satisfying the Effective Writing requirement.

* * *

Language training, according to the Faculty's role statement, is held to be an increasingly important part of a total education. At the present time, the Germanic and Slavic Studies and Romance Studies Departments offer honors, major and minor programs in German, Russian, French and Spanish, a minor program in Chinese and courses in Ukrainian, Portuguese and Italian. The courses associated with the minor in Chinese are now being taught by a full-time staff member and a limited term appointee in the Department of Germanic and Slavic Studies. The language courses in Italian are being taught by a sessional instructor funded for a limited period of time by an external agency. Courses in Ukrainian and Portuguese are offered by full-time staff members now in the Faculty. In assessing the present situation with respect to language instruction, one wonders if it would not be advantageous to cut down on the breadth of the offerings and to concentrate effort in those areas where honors and major programs have already been developed. If this were done, some of the resources and staff time that become available could be used to enrich the remaining course offerings. The acquisition of a staff member to assist in the development of instructional methods and materials for use in conjunction with the excellent language laboratory facilities now available could, for example, enhance the quality of the existing language programs.

Recommendation III.8.6

> *That the Faculty of Humanities review its policy of offering a substantial number of language courses in other than the approved honors and major areas, with a view to reducing the number. The resources so released could be directed to improving the quality of the remaining course offerings and to increasing the time available to staff for scholarly activity.*

* * *

The majority of staff members in the Faculty of Humanities are engaged in the pursuit of scholarly work on an individual basis and there is an opportunity for some to become involved in graduate student supervision at the M.A. level in English, French, German, Philosophy and Spanish and at the Doctoral level in English Literature and in Philosophy. For Departments such as Religious Studies and Classics, without approved graduate programs, there is an opportunity to arrange programs for graduate students on a special-case basis.

Recommendation III.8.7

> *That the Faculty of Humanities periodically assess the desirability and practicability of offering graduate programs*

> *in areas where such programs are not now available and of offering different kinds of graduate programs, for example, non-thesis Master's programs, in areas where conventional programs are already offered.*

* * *

The Faculty of Humanities occupies space in five different buildings at the present time. There is a feeling among some of the staff members that the Faculty would benefit from personal interaction that might take place if the Faculty was housed in one location, as proposed in the long-range plans of the University. The language and literature departments now occupy contiguous space, and it is important that this arrangement be preserved should any reallocation of space within the University involving these departments be contemplated in the near future.

> Recommendation III.8.8
>
> *That, in pursuing the long-term goal of accommodating the Faculty of Humanities in one location, the University make every effort to provide contiguous space for the Departments of English, Romance Studies and Germanic and Slavic Studies.*

* * *

9. FACULTY OF LAW

History

In 1971 General Faculties Council approved the establishment of a Faculty of Law at the University. The academic program and curriculum of the Faculty were approved by Council in 1974-75 and the first class of students was admitted in the Fall of 1976. The Faculty offers a three-year program leading to the LL.B degree, although students may take five years to complete the degree. Admission to the Faculty normally requires three or four years of general university-level work towards a B.A. degree or a degree in some other discipline. Its courses are typically for the LL.B degree; although a few may be taken by non-Law students, the Faculty does not play a major service teaching role.

Organization

The Faculty of Law offers a single program with internal options and areas of specialization such as natural resources and environmental law, family law or business planning, leading to the LL.B degree. As such, the Faculty does not have Departmental or program structure. The Faculty's administration is performed by the Dean and Associate Dean. While the law library, headed by the Law Librarian, is housed in the Faculty, it is part of the University Library system.

Role

The primary objective of the Faculty of Law is to provide a sound basis for the intellectual, human and professional training and development of the lawyer. Secondary objectives are to contribute to the improvement of legal education, to inform and educate the general public about the law, and to seek new legal knowledge and foster effective law reform through legal research and scholarship.

Programs

The Faculty offers a single, three-year program, with options for areas of specialization, leading to the LL.B degree. It does not offer graduate work at the present time. It offers, or participates in, certain courses which may be part of minor programs for students in other Faculties and permits non-Law students to take certain of its courses.

Student-Staff Data

The Faculty of Law reached its planned operating state of about 170 students in the Fall of 1978. Individual course and section enrolment varies modestly in response to the usual factors influencing student choices. The Faculty presently has an academic staff of 18 FTE which are funded through the University budget, with the exception of one or two professors who are financed from external sources. This is the staff complement ultimately agreed upon by the Faculty and the University.

Research

As stated in its development plan and Faculty objectives, legal research and scholarship for the development of new knowledge and for law reform are both seen as important. The labour-intensive teaching model used by the Faculty competes for the research time of some staff. However, some members of faculty, e.g. in environmental law and natural resources law, have been successful in attracting research funding. Further, the recently established Canadian Institute of Resources Law has already begun its research program and promises to be a significant force in stimulating and facilitating research in resource law.

Observations and Recommendations

The Faculty is now essentially in a steady state, having successfully implemented its major development plans. It does not contemplate any major new programs or other developments which would require additional resources. However, the Dean and senior faculty are now of the opinion that their original development plan requires a higher degree of labour intensity than they envisaged and, consequently, the teaching faculty carry heavier loads than is desirable. This is due largely to the Faculty's pedagogic decision to use a practicum in the third year of study, in each of the four areas in which it has attempted to develop particular strength. These areas are: Criminal Justice, Family Law, Natural Resource and Environmental Law, and Business Law and Planning. It is in the latter area that teaching resources are spread most thinly and where addititional resources would contribute most to an improvement in program quality. Also, because Law is a small Faculty, there is little overlap in expertise among staff, administrative work is spread over small numbers and staff turnover creates serious short-run replacement problems. Thus, requests for additional academic staff for use in the area of business law can be expected. However, the congruence of present Faculty resources with those agreed upon, coupled with the fact that the Faculty appears to be offering a solid program with its present resources, makes it difficult to assign high University priority to additional academic staff for the Faculty of Law.

Recommendation III.9.1

That the small size and labour-intensive teaching model of the Faculty of Law be recognized, that its staff complement be guaranteed at least to its present level, and that the University assign intermediate priority to an additional FTE to the Faculty of Law.

* * *

The Faculty of Law has recently helped to establish an Institute of Natural Resources Law which, when coupled with the partially endowed Chair in Resources Law, gives it strength and potential in this area. This Institute should make every effort to establish connections and develop relations with other Faculties, relevant teaching departments and various *ad hoc* research groups on campus, i.e. to integrate as fully as possible into the University community. The Institute already has well-established relations with the Canadian Institute for Research on Public Policy. Additional interaction of this Institute with other existing institutes and the proposed Social Science Research Institute offer a fine opportunity to organize University-wide interdisciplinary research efforts concerned with major questions of public policy.

Recommendation III.9.2

> *That the Canadian Institute of Resources Law be encouraged to develop formal connections with other Faculties, individual departments and research groups, as well as with other institutes in the University, and that the office of the Vice-President (Research) be instructed to coordinate and facilitate the development of such connections.*

* * *

The Faculty of Law currently participates with other Faculties, such as Social Sciences and Environmental Design, in offering joint, multidisciplinary courses. There are other important areas in which similar opportunities exist for multidisciplinary, perhaps joint-degree, work in such areas as Law and Management, Law and Medicine, Law and Social Welfare. The opportunities exist to develop some unique programs and these should be explored more fully. It must be recognized, however, that the further development of such programs will require an increase in staff in some areas of the University. Nevertheless, in many respects such staff increases might be allocated with a view to serving the teaching and research interests of more than a single Department or Faculty.

> Recommendation III.9.3
>
> *That the Faculty of Law continue to explore ways of developing joint course offerings and co-operative programs with other Faculties and that the University give high priority in the future to appointments or reallocations which are necessary to implement these developments.*

* * *

The Faculty of Law is presently located in the top two floors of the Biological Sciences Building. This space is adequate for its needs in the foreseeable future. The Faculty also contemplates proposing a Master's program in two or three years, probably in a special area such as resource law.

10. FACULTY OF MANAGEMENT

History

Prior to The University of Calgary gaining full autonomy in 1966, first and second year courses in commerce were offered in Calgary. In 1967 the Faculty of Business was officially established as an independent degree-recommending unit of the University. The undergraduate program has been reviewed and adjusted several times since its implementation in 1968-69, and currently involves two years study in University College followed by two years in the Faculty. In 1975 the Master of Management Studies program was introduced. The name of the Faculty was changed in 1978 to the Faculty of Management to reflect the emergence of management as a profession and to recognize the fact that its instruction and research programs were geared to producing graduates not only for employment in the private sector but for positions in the public sector and other non-profit institutions as well. As with most Canadian Faculties of Business or Commerce, an enrolment limitation or quota has been established, and the current undergraduate admission quota in the Faculty of Management is 330 FTE students in the third year of the B.Comm. program.

Organization

The academic programs in the Faculty are organized into six "areas" with a Chairman for each: Accounting, Financial Management, Management Science and Information Systems, Marketing, Organizational Behaviour and Design, and Policy and Environment. The Dean has an Associate Dean, two Assistant Deans, one responsible for the undergraduate and the other for graduate programs, and a Director for each of three other program activities: Research and Publications, Community and Professional Relations, and Services and Facilities.

Role

The following role statement is taken from the Faculty Plan.

> The Faculty of Business is a professional school offering programs at the undergraduate and graduate levels that provide for a broad integrative management education while permitting a limited degree of specialization.
>
> The component parts of both the Bachelor of Commerce and the Master of Management Studies programs have been formulated on the principle that graduates will spend a major portion of their lives in constantly changing organizational environments.
>
> Among its other responsibilities the Faculty offers a minor program entitled, Management and Society, and provides service courses to significant numbers of students of the Faculties of Engineering, Science and Social Sciences. Some years ago the University, at the request of the Alberta Institute of Chartered Accountants, accepted the responsibility for most of the formal education required attendant to the training of chartered accountants in Calgary and area.
>
> Over the years the Faculty has assumed a disproportionately high share of the task of providing through the Faculty of Continuing Education, Spring and Summer credit courses, Management Diploma courses, Society of Industrial Accountants courses, bankers courses, realtors courses, and workshops, etc. In addition the Faculty has assumed a special status as a liaison with the business community and the public in general.
>
> Scholarly activities have and will continue to contribute to national and international understanding and knowledge of effective management in private, public and third sector organizations as well as contributing to the specific requirements of various groups and organizations within the local and regional communities.

Instructional Program

The B.Comm. program has a 2 + 2 format. Ten full courses are taken in University College. Of these ten courses, one must be taken in each of mathematics, statistics, economics, accounting and management information systems. Of the remaining ten courses required for the degree, nine are taken in the Faculty and one approved option is taken from a Faculty other than Management. The average section size is 30, the section hours per section are 2.0 and the section hours per FTE are 9.7. These values are similar to those in Economics and Psychology in the Faculty of Social Sciences.

The Master of Business Administration program requires the completion of five foundation half-courses and a further fourteen half-courses plus a research project (which can be replaced by a half-course). Over 150 students are in this program, most of whom are part-time. This program is primarily designed for other than B.Comm. graduates. In Calgary many of the students are engineers, geologists and geophysicists associated with the oil industry.

Public Service Programs

The Faculty of Management holds a special position in Calgary. The City is an important business centre and the Faculty, quite naturally, is involved in various activities associated with the commercial life of the City and the Province. The Faculty is active in the Chamber of Commerce, in continuing education programs, and in professional organizations such as the Institute of Chartered Accountants.

Student-Staff Data

The actual number of academic staff in the Faculty of Management in 1979 is 55.5 FTE. The Faculty had 624 full-time and 163 part-time students in Fall 1979, and there is an enrolment of 446 students in Spring/Summer courses. In 1979, 280 students received B.Comm. degrees and 7 received the M.M.S. Accounting is the most popular area of concentration at the undergraduate level and is elected by approximately 50% of the students. Graduate students favour finance and management of human resources.

Research

It is felt that the Arts and Science norms do not provide the necessary flexibility for the Faculty of Management. The applied versus disciplinary alternatives appear to promote confusion among the academic staff. There is a real need for expectations in the area of research to be clarified. The lack of clear expectations results in misunderstanding and confusion respecting merit assessment, tenure evaluation, and promotion. This matter is discussed further in Chapter IV, Section 2.

The view was expressed that the present system encourages short-term projects based on expediency and rapid output rather than thorough long-term undertakings. This committee is of the opinion that the Faculty should revise its research priorities to reflect stated goals and procedures; in particular, that increased attention be given to research that brings the Faculty into closer contact with business practice.

Observations and Recommendations

For some time the Faculty has been developing a program of study and research which recognizes its role in Calgary, the emerging finance centre of western Canada. This planning has involved debates respecting pragmatic versus theoretical disciplinary approaches. In addition, the emphasis of the Faculty has expanded to include private business enterprises and public and non-profit organizations. It appears that the majority of faculty members have concluded that the applied, or practitioner-oriented, approach is the most appropriate for this Faculty in this City. Furthermore, it is felt that a broad spectrum of management courses to cover public and private organizations is appropriate. In view of the detailed analysis and recommendations contained in the Gillmor Report, an evaluation of the Faculty of Management, and the discussions and decisions of GFC, this Report will not reiterate that material but will highlight specific areas in an attempt to assist the Faculty in its continuing evolution.

> Recommendation III.10.1
>
> *That visibility be given to the position of the Faculty respecting its practitioner-oriented program objectives and to the commitment to breadth in management education.*

* * *

The Faculty finds itself in the midst of what it sees as conflicting demands. It can be documented that there is a need to be filled by an expanded graduate program in Management in Calgary and southern Alberta. At the same time, advice is given by GFC that the Faculty concentrate on the undergraduate program. Executive training programs are necessary and prestigious elements in mangement programs but require careful design and implementation to meet the demanding needs of a critical clientele. The recently established link with the Banff School of Advanced Management will facilitate development in this area. The chartered accounting profession has needs that it has been agreed will be met through the Faculty. All of these apparently conflicting demands must be considered in developing a coherent academic effort. This type of resolution is the essence of planning at a University where priorities must be ordered based on academic insight and pragmatic knowledge of the institution and its overall mission.

Recommendation III.10.2

That the Faculty of Management continue to develop its academic plan emphasizing the following program priorities:

1) *The undergraduate program,*
2) *The M.B.A. program,*
3) *Continuing Education programs (including accounting, professional diplomas, etc.).*

* * *

Relations between the Faculties of Management and Continuing Education are not ideal. The development of programs relating to Management are being delayed due to conflict respecting revenue. The Spring and Summer sessions (administered by Continuing Education) entail a considerable workload because of the undergraduate courses offered. This workload is viewed by some faculty members as disproportionate to the benefits received, and perhaps as competing for students who otherwise would enrol in the Fall and Winter sessions. Limited M.B.A. offerings are available in Spring and Summer sessions. Referred to also in Section 2 of this Chapter.

Recommendation III.10.3

That programs in Continuing Education relating to Management be reviewed to determine the best use of revenue from them.

Recommendation III.10.4

That a detailed analysis of Management Spring and Summer offerings be undertaken to determine the implications of including this workload in the normal faculty workload.

Recommendation III.10.5

> *That the M.B.A. program be reviewed to determine what courses should be made available in Spring and Summer.*

* * *

Institutional policies may not be well appreciated by the Faculty of Management and this has been the source of some problems. For instance, there is evidence that at least one component in the rationale for changes in course descriptions was the assumption that this was the only manner in which an increased space need could be documented. It is possible to have classrooms assigned solely to a Faculty if the utilization is sufficiently high, without this type of manoeuvering. Another example relates to the wish of the Faculty to carry out its own institutional analysis and data-gathering rather than depend on OIR for institutional research services. (See Chapter II - University Information Systems). The institutional approach to promotion, salary-rank structure, merit assessment and tenure system is viewed by the Faculty of Management as being less than ideal for its needs. (See Chapter IV, Section 2). It is apparent that the Faculty of Management, with its important professional role, wants and needs University acceptance and support. It is also apparent that the Faculty is unsure of how to gain acceptance within the University and to obtain the resources to meet what undoubtedly will be a complex future.

Recommendation III.10.6

> *That the intent of University policies in respect of academic staff and space allocation be clarified to stop wasteful duplication of effort within the Faculty of Management.*

Recommendation III.10.7

That institutional procedures respecting appointment, promotion and salary be reviewed to determine if they inhibit the role of the Faculty of Management within the overall mission of the University.

* * *

11. FACULTY OF MEDICINE

History

Following recommendations of the Royal Commission on Health Services, in late 1965 the Government of Alberta announced plans for the establishment of a medical school at The University of Calgary. The proposal was accepted by the General Faculties Council and the Board of Governors and the decision to proceed with development of the school was announced in early 1966. In March, 1966, a special grant was made to the University by the Government of Alberta for the acquisition of books and periodicals to form the nucleus of a medical library. The appointments of the Dean and first faculty members were made during 1967.

In February, 1968, The University of Calgary was granted $15 million by the Provincial Government to proceed with construction of the medical school, and in August, 1969, the capital grant was increased to $25 million. Architects were appointed in March, 1968, and plans developed for construction of interim facilities for the medical school within the Foothills Hospital. In June, 1968, Foothills Hospital accepted its first interns and a year later the residency program was established. A family practice residency program already in place at the Calgary General Hospital was brought under University auspices.

In 1970 the interim facilities were completed, the first students were admitted and construction started on the permanent building, which was completed in July, 1972.

Organization

Senior administrative officers include the Dean, an Associate Dean and Assistant Dean for Medical Education, an Associate Dean and Assistant Dean for Medical Research, and an Associate Dean for Graduate Clinical and Continuing

Medical Education. The University of Calgary Clinic has been incorporated within the Faculty. Divisions in the Faculty of Medicine are: Anaesthesia, Community Health Science, Continuing Medical Education, Educational Planning and Assessment, Family Practice, Internal Medicine, Medical Biochemistry, Medical Biophysics, Medical Physiology, Morphological Science, Obstetrics and Gynaecology, Paediatrics, Pathology, Pharmacology and Therapeutics, Psychiatry, Diagnostic Radiology, and Surgery. (* See footnote on reorganization of the Faculty page 163.) Other units include Oncology Research, the Medical Vivarium, Medical Instructional Resources, Medical Library and the Electron Microscope Unit.

Role

The role statement of the Faculty of Medicine reflects its long-term broad objectives, as follows:

1. To produce doctors specializing in family medicine who will act as primary contact physicians and as coordinators of the activities of all members of the health team in the care of their patients.

2. To produce doctors well-trained for entry into the traditional clinical specialties (internal medicine, surgery, paediatrics, etc.).

3. To provide an environment conducive to research and to seek new knowledge through research.

4. To improve medical education through contributions to research in medical education, ongoing evaluation of the curriclum, and by a system for evaluation of students and faculty.

5. To produce, in collaboration with the affiliated teaching hospitals, doctors qualified in those clinical specialties with programs approved by the Graduate Clinical Education Committee.

6. To produce medical scientists under the auspices of the Faculty of Graduate Studies.

7. To provide continuing education for family physicians and other clinical specialists.

8. To provide through its faculty members, in the setting of the Ambulatory Care Centre, health care institutions and private offices, high quality health services.

9. To foster, by research and education, the optimum delivery of health care services to the community.

10. To provide learning experiences (and continuing health education), for the allied health professionals and other professions in the Faculty and in collaboration with other faculties and agencies. These experiences may be provided for students working towards diplomas or degrees in the sciences.

11. To support and to contribute to public health education.

Student-Staff Data

In September, 1979 the Faculty of Medicine included 71.5 FTE academic staff funded from the University operating budget and an additional 70.1 FTE funded from external sources. This in no way reflects the human resources necessary to operate the Faculty. There are listed in the Calendar the names of over 350 individuals associated with the Faculty of Medicine in a variety of capacities. The appointment of an individual in a clinical area in the Faculty of Medicine normally carries with it a negotiated appointment with a hospital.

The undergraduate M.D. program consists of three eleven-month academic years. Currently, there are 72, 75 and 68 students in the first, second and third year of their programs respectively. Also, there are 230 other medical students engaged in post-graduate clinical residency programs and 41 in graduate medical science programs offered through the Faculty of Graduate Studies.

Research

The Faculty of Medicine Development Plan as revised in Fall, 1979 presented the following views and priorities relative to research development:

> The present level of maturity of the Faculty of Medicine, the physical opportunity to accommodate new faculty, and the advent of provincially-based funding for biomedical research affords the Faculty, The University of Calgary and the affiliated teaching hospitals with an opportunity, carefully exploited, to achieve new levels of medical academic excellence in Canada.
>
> While the Medical School approaches the anticipated growth and development with enthusiasm and, indeed, impatience, the institution acknowledges a heavy responsibility to the public and its peers across the country. The need to responsibly and successfully implement programs of research and to apply the findings of that research to patient care is great. This will entail, for the Faculty of Medicine and related Faculties, productive work in biomedical research, the development of future directions, the recruitment of high quality research scientists and the development of an environment conducive to productive scientific enquiry.

Research Development Priorities

The direction of medical research within the Faculty of Medicine requires agreement on priorities. The following priorities have been agreed to by the Faculty, but are not necessarily endorsed by this Committee.

A. The major priority be assigned to areas of current research strength where either the full spectrum of academic activity exists (teaching, research and patient care) or would be realized by immediate development. Development would be directed to the enhancement of research, filling recognized deficiencies in expertise, resulting in a greater likelihood of high quality basic research and the introduction of new knowledge to clinical training programs and patient care.

B. A priority be granted to the recruitment of scientists to new research groups formulated by the Faculty Committee on Research with first priority again going to those proposals that would reasonably result in excellence in research, teaching and patient care.

C. The next priority be granted to those programs which have achieved significant research strength and where growth would permit the achievement of excellence but where the full spectrum of academic activity has not and may not be achieved.

D. A priority be granted to recruitment likely to provide the Faculty with an individual or a small group of scientists with recognized ability to attract and develop new, young scientists and whose ability to teach the philosophy of science and scientific method is considered excellent.

Significant current strengths and opportunity for full development exist in a number of active programs:

1. Growth and development, the biology of reproduction, genetics.
2. Basic and clinical neurosciences and neuroendocrinology.
3. Oncology, immunology.
4. Basic and clinical endocrinology.
5. Microbiology and clinical infectious disease.
6. Cardiopulmonary sciences, including clinical cardiology, respirology, intensive care, anaesthesiology.
7. Basic and clinical programs and musculoskeletal disorders.

Observations and Recommendations

The Faculty of Medicine will undergo profound changes during the next decade due to the impact of funds from the Alberta Heritage Foundation for Medical Research. The task of mounting an effective and far-reaching research program is an immense undertaking, demanding the mobilization, coordination and optimization of all available resources. The magnitude of the Heritage Research program, combined with Alberta's small population base, is such that hundreds of skilled researchers will move to this Province. It would be unfortunate if this massive influx of research talent took place without first assessing the capability and availability of existing faculty already at the University to contribute to the aims of this new thrust. For instance, the work of the University's existing basic research units could be considered complementary if not integral to the formation of new research groups.

The Faculty of Medicine, in revising its Development Plan in the Fall of 1979, set a precedent in this regard by ordering its research priorities. Consequently, it would seem appropriate that a University-wide appraisal be initiated to identify non-medical faculty capable of participating in research projects that would be eligible for support by the Alberta Heritage Foundation for Medical Research.

Recommendation III.11.1

That the Vice-President (Research) interpret the terms of reference of The Alberta Heritage Foundation for Medical Research to all faculty members of the University to encourage the development of high quality research teams.

* * *

The Faculty of Medicine recognizes that the potential explosive growth in the area of medical research may affect its plans for the full development of some clinical areas. A major portion of the Faculty's Five Year Development Plan and of its 1979 request to the University Budget Committee was devoted to this topic and to a presentation requesting increased staffing in the clinical area. Planned development in the clinical area was affected by funding constraints during the Faculty's formative years, and by the fact that funding from external sources did not develop as expected. Consequently, the Faculty currently is characterized by the presence of strong basic science groups with some deficiencies in the area of clinical education.

> Recommendation III.11.2
>
> *That the Faculty of Medicine attempt to reallocate funds within the Faculty in order to strengthen the clinical aspects of its program.*

* * *

The University has recognized the need in the clinical area for some time and has responded by reallocating approximately $900,000 from other units through the University's normal budgeting procedures, as was noted in Chapter II. In addition, requests have been forwarded by the University Budget Committee to the Board of Governors for special funding for an increase in clinical positions.

> Recommendation III.11.3
>
> *That the University request special funding from the Provincial Government to permit the completion of the development of the Medical School, especially in the area of clinical education.*

* * *

The concept of allied health is highly regarded in the Faculty of Medicine. At present, health care education is fragmented on the University campus, with considerable geographic barriers separating Medicine, Nursing, Physical Education and Social Welfare. The Faculty of Medicine is sympathetic to shared endeavours with other groups, but analysis shows that the number of active combinations is few. It would appear that the allied health concept does not work due to the fact that non-medical Faculties are not in strong bargaining positions. The Faculty of Medicine tends to be expected to make its resources available and to subsidize joint ventures. This is sometimes difficult because of internal demands on its resources. Despite these difficulties, the Faculties concerned maintain that there are areas where it would be of mutual benefit for them to work together closely, e.g. in Family Therapy, Human Social Function, Gerontology, Nutrition, Occupational Health, Exercise and Altitude Physiology, Sports Medicine and Cardiac Rehabilitation.

> Recommendation III.11.4
>
> *That a sub-committee of Deans be formed, under the Chairmanship of the Vice-President (Academic), for the purpose of identifying areas where it would be mutually beneficial to pursue the Allied Health concept of health care education.*

* * *

A detailed and thorough presentation was made to the University Program Review Committee by the Alberta Optometry Association to establish an Optometry School at The University of Calgary. In reviewing the situation, optometry was recognized as having the potential to be a strong academic program and one which appears to be needed in western Canada. The establishment of a School of Optometry is not, however, contained in the development plan of the Faculty of Medicine at this time. In view of the fact that the western Provinces have established a task force on health care education, it is inappropriate to reach a final decision on this matter at this time.

* * *

The Faculty of Nursing is at present housed on the University campus and does not easily maintain contact with either the Faculty of Medicine or the Foothills Hospital. Both the Faculty of Medicine and the Faculty of Nursing have expressed an interest in forming closer associations. This matter is referred to also in Section 12 of this Chapter.

> Recommendation III.11.5
>
> *That some clearly identified space be made available to the Faculty of Nursing in the Medical Science Building in order to strengthen the ties between the two Faculties.*

* * *

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[*] GFC has recently recommended to the Board of Governors that the Divisions in the Faculty be renamed "Departments", without altering the current administrative and program structure. This reorganization proposal would lead to the following Departments: Anatomy, Anaesthesia, Clinical Neurosciences, Community Health Science, Continuing Medical Education, Family Practice, Internal Medicine, Medical Biochemistry, Medical Physiology, Microbiology and Infectious Diseases, Obstetrics and Gynaecology, Paediatrics, Pathology, Pharmacology and Therapeutics, Psychiatry, Radiology, Surgery. The Faculty is reviewing the future role of the Divisions of Medical Biophysics and Educational Planning and Assessment.

12. FACULTY OF NURSING

History

General Faculties Council approved a motion to establish a Faculty of Nursing with initial responsibility for provision of a four year baccalaureate program in the Fall of 1969. A two year post-R.N. baccalaureate program was approved in 1976. The Faculty has recently obtained the approval of the Faculty of Graduate Studies for a Master's degree to be implemented in 1981. The proposal has recently been approved in principle by the Department of Advanced Education and Manpower.

Organization

The Faculty is presently administered by the Dean and an Assistant Dean of Student Affairs. An additional Assistant Dean (Undergraduate Program) has been appointed effective January, 1981, and it is anticipated that a further administrative appointment will be made in due course in respect of the proposed Master's Program in Nursing.

Role

The role of the Faculty of Nursing as outlined in September, 1979, is as follows:

> The Faculty of Nursing has established that its major thrust is to prepare nurses who are competent practitioners in all health care agencies and in the domiciliary setting. These graduates are concerned with expanding their professional knowledge and expertise in the development of their careers. This principal objective will be achieved through the expansion of undergraduate and graduate programmes provided by the Faculty. The Faculty has a special responsibility to increase the knowledge base of nursing through research into all aspects of nursing practise; and to make their findings available to the academic community, to the profession and to society as a whole.

Student-Staff Data

Of the 235 full-time students enrolled in the Faculty of Nursing in 1979, 187 were in the four-year baccalaureate program and 48 students were in the Post-R.N. program. Some 53 students graduated in 1979. It is interesting to note that in 1971-72 the Faculty offered a total of 5 courses to 79 full-time students with an academic staff of 12.8 FTE while in 1979-80 they offered 18.5 courses to 235 full-time students with an academic staff of 24.5 FTE. It therefore appears that between the years of 1971 and 1979 course offerings and total full-time student enrolment more than tripled while a similar pace has not been maintained in the number of faculty members.

Research

The Faculty has attracted a number of research-oriented individuals. Twelve faculty members are currently involved in a total of fourteen research projects in areas such as intravenous antibiotic administration, spinal cord injury management, development of coping response inventory, factors affecting recovery from myocardial infarction, renal blood flow during fever, a survey of geriatric needs and services, a comparison of traditional and computer-assisted instruction in surgical nursing, and parent-infant attachment. In 1978-79, $67,000 in research grant money was awarded to the Faculty of Nursing. Research links have been established with The University of Calgary Faculty of Medicine and the Faculty of Nursing at the University of Alberta.

Observations and Recommendations

The first priority for the Faculty of Nursing is the implementation of a Master's Program in 1981. It appears that various clinical options will be available to students in the initial stages of the program and emphasis on research will develop as a future thrust. There is a very real demand in Alberta for nurses with post-graduate education. This need was clearly outlined in the Report of the Alberta Task Force on Nursing Education in 1975, which emphasized the need for clinical nursing specialists, teachers of nursing and administrators of nursing services.

Recommendation III.12.1

That every effort be made to implement a Master's degree program in Nursing by 1981.

* * *

The establishment of a Master's degree program will be a major factor in assisting the Faculty to expand its expertise in teaching and research. The development of nursing science based on sound research methodology is vital to the improvement of the quality of nursing care and to the establishment of appropriate decision-making roles for nurses in a total health care team.

Recommendation III.12.2

That active measures be taken to increase opportunities for faculty members and students to undertake nursing research, and that consideration be given to the establishment of a nursing research unit.

* * *

With the approval of a Master's degree program it becomes vital that clinical and research environments be expanded. The position of the Faculty of Nursing as a member of the health sciences group of The University of Calgary requires strengthening. At present, the Faculties of Nursing and Medicine are separated by considerable geographical distance. It is apparent that better communication among these groups should be fostered in order to maximize the potential of individual students and faculty members. The teamwork which has developed between members of the Faculties of Nursing and Medicine should be encouraged and, hopefully, expanded.

Recommendation III.12.3

That shared research and teaching endeavours with the Faculty of Medicine be encouraged.

* * *

The Faculty of Nursing is operating in very restricted quarters which in part necessitates the imposition of a student enrolment quota. A considerable number of qualified students, especially in the Post-R.N. program, are turned away each year. The present location isolates Nursing from other members of the health care team which is detrimental to the development of its potential. See comments in Section 11 of this Chapter.

Recommendation III.12.4

That adequate space be allocated to the Faculty of Nursing for the ongoing development of teaching and research programs. Furthermore, serious consideration should be given to the allocation of some space to the Faculty of Nursing in the Health Sciences Building to enable it to strengthen its ties with the Faculty of Medicine and the Foothills Hospital.

* * *

There is need for additional and more readily available clinical experiences for Nursing students. Considerable time is being spent by members of the Faculty of Nursing in securing and arranging placement for their students. It is possible that this time-consuming task might better be carried out by a Calgary-wide coordination agency for student experiences in the social services. The University could provide some leadership in creating such an agency.

Funding for such an office could come from the groups receiving students and services, such as the hospitals, public health agencies, etc. The saving in time and money to all groups might be considerable. In addition, this process might strengthen communication between individuals and groups, both within the University and outside. A study of co-op education may include this concept. See also Chapter IV, Section 7.

> Recommendation III.12.5
>
> *That the Faculty of Nursing consider supporting the establishment of a city-wide coordination agency for student-clinical experiences in the social services.*

* * *

Both the Provincial Government and the Alberta Association of Registered Nurses have acknowledged the need for expansion of baccalaureate nursing education in Alberta. Any expansion will require more flexible use of scarce nursing faculty and the clinical resources in the institutions concerned.

> Recommendation III.12.6
>
> *That the Faculty of Nursing explore the possibility of closer liaison with the Foothills Hospital School of Nursing and the Mount Royal College nursing diploma program.*

* * *

There is an immediate need for expanded credit and non-credit courses for about 15,000 registered nurses in Alberta. One of the most urgent needs of the nursing profession is to increase the academic and professional knowledge of practising nurses. The Faculty is frequently under considerable pressure to provide additional courses to service these needs.

Recommendation III.12.7

That the Faculty of Nursing collaborate with the Faculty of Continuing Education and the University of Lethbridge to provide credit and non-credit courses to nurses in southern Alberta.

* * *

13. FACULTY OF PHYSICAL EDUCATION

History

The School of Physical Education offered a three-year general and four-year honors program at the time The University of Calgary gained full autonomy in 1966. In 1975 the School became known as the Faculty of Physical Education. The Faculty has been responsible for the physical education courses offered to students in the Faculty of Education and, normally, teachers qualifying to teach in physical education in the secondary schools have been expected to have a Bachelor of Physical Education degree. Enrolment in the Faculty has fluctuated between 300 and 400 students over the last decade.

Organization

The Dean is assisted in administration of the Faculty by two Associate Deans, four academic coordinators, and heads of several service areas.

Role

As outlined in its Development Plan, the role of the Faculty of Physical Education is as follows:

> The Faculty of Physical Education has as its primary responsibility the pursuit and communication of knowledge in the areas embodied in physical education, with application for benefit of the individual and society.
>
> The role of the Faculty is to provide an environment conducive to scientific inquiry and application of knowledge and skill in human movement as practised in play, recreational activity, physical education, dance, sport, health and fitness activity and athletic endeavour in society. On campus this role is exemplified through the academic, athletic and recreational programs offered by the Faculty of Physical Education.

> In meeting its responsibility the Faculty provides an undergraduate program which features various routes of specialization. Faculty members have been involved in graduate study programs offered by other Faculties and anticipate the opportunity to provide graduate study in physical education. In addition, the Faculty provides academic, athletic and recreational programs designed to service the University community. Currently the Faculty of Physical Education is involved in an extensive outreach program of public, professional and community service activities.
>
> Since inception of the School of Physical Education in 1966, the character of the Faculty has evolved from a singular concern with professional preparation towards an increasing concern for successfully accommodating both a professional and a disciplinary orientation in studying and communicating physical education. This evolution in character within the Faculty of Physical Education has moved the Faculty to a mid-range position within the general trend occurring at many similar institutions and in the total field of physical education. The field of physical education is in a dynamic state with a welter of viewpoints and forces challenging the nomenclature, nature and boundaries of previous conceptualizations of the field.
>
> The Faculty of Physical Education is attempting to align with certain of the trends within the disciplinary orientation which are judged to be functional in realizing the University charter and the purpose for existence of the Faculty at The Unversity of Calgary.

Therefore, the Faculty of Physical Education comprises three somewhat distinct functions. They are (1) teaching and research in physical education, (2) organization and coaching of team sports, and (3) organization and development of recreational and leisure time physical activities. It is generally agreed within the Faculty that academic research has been somewhat neglected in the past and it is in this direction that the Faculty's major efforts for development in the future seem to be directed.

Programs

The Faculty of Physical Education offers a three-year undergraduate degree (Bachelor of Physical Education) with specialization in general Physical Education, Outdoor Pursuits, Pre-adolescent Physical Education, Dance Education and Adolescent Physical Education. There is also a four-year honors program. A proposal for a Master's program (emphasizing coaching, functional fitness and outdoor recreation) has been approved in principle by AAEM.

Student-Staff Data

The Faculty consists of 40.5 FTE academic staff in 1979-80. In the Fall of 1979 there were 2,493 section enrolees or 6,358 WSH. The total WSH taught in physical education remained fairly stable from 1976 to 1979 while FTE have increased by 29% over the same period. This has brought the Faculty of Physical Education ratio of WSH/FTE to 157, below the University average of 185. It is, however, difficult to interpret these figures in relation to other Faculties, because of campus recreation and coaching activities. See Recommendation III.13.4 following.

It may be important to note that the mix of students seems to have changed somewhat in recent years. In the past emphasis has been towards the training of undergraduates who would be employed as physical education teachers, high school coaches, etc. This emphasis has been decreasing. It has been estimated that, where some 90% of the Faculty's graduates in the late 1960's would have been employed in educational positions, only 55 - 60% are now so employed.

Research

The amount of original research carried on by the Faculty of Physical Education to date has not been very great. As facilities are developed and research staff are acquired, the Faculty hopes to alter this situation. However, there have been some efforts made, particularly in cooperation with other Faculties such as Medicine, and with outside agencies. These efforts have included studies of the effects of flexibility and strength on swimming performance, a physiological profile of Olympic athletes, relationships between hormonal imbalance and physical activity, and effects of high altitude climbing on red blood cells and pulmonary control.

Observations and Recommendations

The Faculty's development plans and priorities over the next five years are based on increased emphasis on scholarship and research, in connection with a proposed graduate program. Requests have been made for new facilities and capital funds have been allocated for the purchase of additional research equipment. There is no question that the existing facilities and research equipment are barely adequate. Some attempt to alleviate this problem has been made by encouraging research projects in collaboration with the Faculty of Medicine where such facilities exist, but this is only a stop-gap strategy. The widespread opinion in Physical Education is that the lack of research facilities and no graduate program have seriously hampered recent efforts to hire research-oriented faculty members. Over the next five years the Faculty plans to hire three or four additional faculty members to enhance the academic/research program. Since faculty members in Physical Education are relatively young, retirements will provide little flexibility for hiring.

There are three interrelated factors involved; physical facilities, additional research-oriented staff, and the proposed graduate program. If the argument is valid that quality staff cannot be attracted here without research facilities and a graduate program, it might be argued that additional hiring should await implementation of these two aspects. This may be impractical since these additions, even under the most favourable circumstances, are probably not going to be completed for two to five years. Since the present research facilities are minimal and since the present Dean and his faculty members are enthusiastic about the academic/research development of the Faculty and appear to be able to support their arguments with examples of how development will bring both provincial and national benefits, we feel immediate action is warranted.

Recommendation III.13.1

> *That an increase in research facilities and equipment for the Faculty of Physical Education, and the proposed Master's program, continue to receive high priority in the University. The University should encourage other Faculties to make research space and equipment available to the Faculty of Physical Education in the interim.*

* * *

In 1972 a study of the School of Physical Education was completed. Among the specific recommendations of that study were the following:

> The Committee recommends that the School of Physical Education appoint two or three new staff with major responsibilities in the development of senior academic teaching curricula and to mount research programs.

and

> The Committee recommends that the implementation of a graduate program is premature at this time but should evolve with the appointment of a nucleus of scholarly oriented Faculty members as above.

Since 1973 the FTE academic staff in Physical Education has increased by 15.9 or 65%. It would appear that the recommendations of that evaluation committee were not followed since we seem to have the same situation today as was described eight years ago. Granted that the Faculty has a new administration, a new sense of purpose, and has recently made some promising appointments, the University needs some assurance that monies allocated to the Faculty for specific academic/research purposes and for specific types of appointments will be used for those purposes.

Recommendation III.13.2

> *That the Faculty of Physical Education continue to fill the positions which it has been allocated with personnel who will enhance the academic/research development of the Faculty. The question of additional staff must be deferred until a decision on the proposed graduate program is reached.*

* * *

Part of the mandate of the Faculty of Physical Education involves the provision of recreational programs for the University community. As in the case of research, which has previously been mentioned, the need for space and facilities is obvious.

Recommendation III.13.3

> *That the University recognize the need for recreational space and facilities, in addition to academic and research space and facilities, when considering the requirements of the Faculty of Physical Education.*

* * *

There remains some question in our minds regarding the fairness of University formulas that attempt to measure certain aspects of faculty workloads, as they are applied to the Faculty of Physical Education. Specifically, there are three individuals included in the Physical Education FTE count who, as we understand it, play no role at all in teaching, supervising or advising students enrolled in credit courses, their duties being limited to campus recreational matters. If this is true, then workload/resource indicators (e.g. WSH/FTE, course enrolees/FTE) that are limited to credit programs do not count the workload of these individuals in the numerator of any equation and, therefore, should not include the people (as FTE's) in the denominator.

Recommendation III.13.4

That the University Budget Committee determine, specifically, the appropriateness of the present workload formulas as applied in the cases where the entire duties of individuals included in the FTE academic staff count are unrelated to any contact with students in credit courses.

* * *

14. FACULTY OF SCIENCE

History

The Faculty of Science was established as a separate entity after the division of the Faculty of Arts and Science in 1975. The normal route for admission to the Faculty is at least a year in University College, after which major or honors programs are offered for the B.Sc. and, in some cases, the B.A. degree. Although most students regard science courses as providing a basic education rather than job training, those in Geology and Geophysics and Computer Science increasingly view their programs as a means to a vocational end. Traditionally, the Faculty of Science has provided the basis for entry to Medicine and Veterinary Medicine and has cooperated with the Faculty of Education in preparing prospective teachers at both the primary and secondary levels. Except for Computer Science, which separated from Mathematics and Statistics in 1975, all Departments offer M.Sc. and Ph.D. programs. In 1977-78, the Faculty was the subject of an evaluation by a Presidential Task Force (the Ward Report) which was, in general, highly complimentary. Many of the recommendations and suggestions in, and following from, the Ward Report have been acted upon and others are in the process of being implemented.

Organization

The six academic Departments in the Faculty of Science are Biology, Chemistry, Computer Science, Geology and Geophysics, Mathematics and Statistics, and Physics: some of these, such as Biology, Chemistry, and Mathematics and Statistics are further structured into Divisions. The Division of Biochemistry within the Department of Chemistry and the Division of Medical Biochemistry in the Faculty of Medicine jointly form the University Biochemistry Group. A Technical Services Unit in the Faculty provides ancillary assistance. The Faculty's administration is handled by the Dean, the Associate Dean and the Assistant Dean in conjunction with Department Heads.

Role

The primary responsibility of the Faculty of Science is the pursuit and communication of knowledge in the natural and mathematical sciences. It is concerned with both the theoretical and applied aspects of this fundamental endeavour. The Faculty also recognizes obligations to enhance appreciation among non-scientists of the nature and implications of scientific thought and, to this end, participates in interdisciplinary and joint research enterprises and offers its services in aid of other Faculties' programs.

Programs

The wide range of the Faculty's responsibilities and interests is partly indicated by a list of programs that can be designated as major fields: Animal Biology, Cellular and Microbial Biology, Environmental Biology, Plant Biology, Biology; Chemistry, Biochemistry; Computer Sciences; Geology, Geophysics; Pure Mathematics, Applied Mathematics, Statistics; Physics, Astrophysics, Chemical Physics. More sophisticated and specialized versions of these basic categories are available for study at the graduate level.

Student-Staff Data

Although the number of full- and part-time graduate students has slipped since the early seventies, the number of course enrolees has remained relatively constant since 1970, with 10,500 as an average. It is impossible to infer from these data that students are gravitating towards the more "applied" areas of science, though the Department of Computer Science continues to grow. The academic staff in the teaching Departments of the Faculty has steadily increased from 209 in 1970 to 226 in 1975 to 250 in 1979-80. During the same period, WSH fluctuated from 51,735 to 55,887 to 53,051. Although internal reallocation proves to be difficult in the Faculty, some redistribution of resources has been possible in the last several years. The creation of the Position Allocation Committee should assist the Dean in reducing the minor inequities remaining within the Faculty.

Research

The Faculty of Science receives about a third of the reseach-grant support awarded to the University and has been commended by the Ward Report for housing energetic and productive research programs. In some areas, geophysics and computer science, for example, gaps need to be filled, primarily for the sake of undergraduate programs. In other areas, such as Chemistry, the addition of another internationally recognized scholar would put the Department among the handful of top departments in Canada.

Observations and Recommendations

The Faculty of Science continues to have an important role in providing well-educated scientists for Alberta and Canada. Current developments will require the channelling of additional staff and resources into specific areas of the Faculty. These new directions are supported by the Faculty as a whole and should be supported by the University community.

These new initiatives, however, should not obscure the fact that the current constraints on the University's capital budget have impaired the Faculty's capacity to offer high quality programs. Despite donations of equipment in areas such as geology and the use of private research grants to help stock laboratories, the Faculty continues to struggle against the combined effects of increasing costs and inflation. New programs cannot be mounted without new capital equipment; ongoing programs cannot continue without new and upgraded equipment.

> Recommendation III.14.1
>
> *That the University Budget Committee and the Department of Advanced Education and Manpower recognize that deterioration of science programs is inevitable unless capital equipment can be purchased, replaced and maintained and unless supplies and sundries are adequate for the functioning of teaching and research laboratories.*

A proposal for the expansion of the Exploration Geophysics program has been approved by GFC and has been submitted to the Department of Advanced Education and Manpower. In addition, initiative shown by the Department of Geology and Geophysics with strong support from the profession has led to a successful fund-raising campaign to support an endowed Chair in this area. There is little doubt that the desire and the need for expanded programs in geology and geophysics are acute.

> Recommendation III.14.2
>
> *That the University continue to make the implementation of the expanded Geophysics program an institutional priority.*

* * *

> Recommendation III.14.3
>
> *That the space needs of the Geophysics program be considered an institutional priority.*

* * *

A second area of enormous potential within the Faculty of Science is Computer Science. Since 1975 the Department's course enrolees have risen from 680 to 1,154, while the staff has remained constant at 20. The Department is so heavily committed that senior undergraduate students are sometimes pressed into service for instructional duties. Although the Department does not list the establishment of a Ph.D. program as an immediate objective, there seems little chance that interest in or need for computer sciences will subside, especially in view of the proposed program in Computer Engineering which in itself would require, if approved, additional staff for the Computer Science Department. Moreover, as a young Department, it could benefit academically from having more senior staff to enhance its rapidly growing reputation in research.

Recommendation III.14.4

That the Position Allocation Committee regard the provision of additional academic staff to the Department of Computer Science as a high priority.

* * *

Mathematics and Statistics is a large, diffuse Department that teaches Pure and Applied Mathematics, as well as Statistics, and has a good research record. Although six FTE have been added to the Department since 1975, recent loss of staff, coupled with several imminent retirements, may undermine the Department's teaching and research capacity unless some replacements are allowed. Enrolment patterns in the Department are complex. The Ward Report points to declining enrolments, but the Department continues to play a large service role in the University and is therefore especially sensitive to enrolment trends and program decisions made in other units. The WSH/FTE ratio remains high at 253, although some senior and graduate courses suffer from inordinately low enrolment, as is noted in the Ward Report.

Recommendation III.14.5

That, recognizing the importance of service teaching in the Department of Mathematics and Statistics, the Faculty of Science reduce section sizes in junior courses and "service" courses.

* * *

The Department of Chemistry, undoubtedly one of the most impressive in the Faculty in the area of research, has had relatively stable enrolment for the last decade while the academic staff count remained steady. The Department wishes to strengthen the area of applied chemistry in recognition of the importance of the natural resources industry of the Province and plans to propose a Chair in this area.

Recommendation III.14.6

That the Department of Chemistry be encouraged to expand its strength in applied chemistry both through seeking an endowed Chair and by arguing for the appointment of an eminent scholar in this area when a position becomes available to the Faculty.

* * *

If any attrition of faculty could be justified in the Faculty of Science, it is in Biology, a Department in which undergraduate enrolments have declined, dipping below the 2,000 course enrolee mark in Fall, 1979, for the first time in 10 years. Meanwhile, academic staff have steadily increased (51.4 FTE in 1971-72; 62.5 FTE in 1979-80). Although the current WSH/FTE ratio of 175 is low for the Faculty of Science, the large graduate program and the varied undergraduate programs may make reallocation a difficult task if deficiencies in the coverage of the discipline are to be avoided.

The Faculty of Science has made a positive contribution to the rest of the University through cooperation in groups such as the University Biochemistry Group, multidisciplinary projects, joint programs, and courses for non-science students. As study in the sciences becomes increasingly specialized, the peculiar needs of the science education teacher and, for that matter, the general student in fields unrelated to the sciences may become more difficult to meet. (See comments in Section 3 of this Chapter).

Recommendation III.14.7

That the Faculty of Science, in conjunction with the Faculty of Education, continue its efforts to improve the quality of prospective science teachers and to up-grade the knowledge of those now teaching.

* * *

None the less, the Faculty of Science has a declared responsibilility for the dissemination of scientific knowledge to the non-scientist. In addition, students majoring in the sciences should be encouraged to broaden their education by enrolling in courses offered by other Faculties. Hopefully, revisions in the University timetable and a recognition on the part of Faculty advisers of the importance of breadth in education will help facilitate this. (See also Chapter IV, Section 1, Recommendation IV.1.5).

Recommendation III.14.8

That the Faculty of Science review its curriculum periodically with the interests of the non-science major specifically in mind.

* * *

15. FACULTY OF SOCIAL SCIENCES

History

The Faculty of Social Sciences was established as a separate entity with the division of the Faculty of Arts and Science in 1975. The normal route for admission into the Faculty is at least one year in University College after which major or honors programs are offered for the B.A. degree in all Departments of the Faculty, and for the B.Sc. degree in two Departments. All Departments offer Master's degree programs and, with the exceptions of Anthropology, History and Linguistics, all Departments offer Ph.D. programs.

Organization

The Faculty consists of nine academic Departments: Anthropology, Archaeology, Economics, Geography, History, Linguistics, Political Science, Psychology and Sociology. Administration of the Faculty is performed by the Dean, an Associate Dean, and Assistant Dean and the nine Department Heads. An Associate Dean (Research) has been appointed recently.

Role

The Faculty's role can be summarized by the following excerpts from its Development Plan:

> It is the purpose of the Faculty of Social Sciences to provide a sound understanding of the nature of society and social interaction to the general student body, and to equip the more specialized students to play an important role of social leadership upon their graduation.
>
> An ancillary purpose of the Faculty is to promote self-knowledge of the larger society about us - in the words of the Symons Report, To Know Ourselves . . . (and to act) . . . in an advisory function to society at large . . .

> Finally, the promotion of research as an independent form of social enquiry has been and must be an essential function of any social sciences Faculty.

Programs

In addition to offering both general and honors B.A. and B.Sc. degrees in the major fields represented by the nine Departments, the Faculty also permits a minor field of study to be declared in conjunction with these degree programs. These minor fields are taken in other Faculties in the University, such as Management, Fine Arts, Social Welfare and Science, as well as in Social Sciences. In addition, the Faculty offers a large number of courses which comprise a major part of the series of Interdisciplinary Studies minor programs administered by the University College; Canadian Studies, Law and the Liberal Arts, Latin American Studies and Urban Studies are examples of such programs.

Student-Staff Data

Since its establishment in 1975, a year of peak enrolment, the Faculty has experienced enrolment declines. Course enrolees in 1979 declined to their 1973-74 levels of about 12,000. Similary, total WSH have declined from 49,160 to 41,730 and section enrolees from 19,400 to 16,450 since 1975. These declines have not, however, been spread evenly across Departments within the Faculty; all Departments have experienced declines except Economics, which has held relatively constant, and Political Science which has enjoyed increases.

The academic staff in the Faculty has increased slightly since 1975; from 217 FTE in 1971, it decreased to 201 in 1975 and has since risen to 213. Again, however, during the period since 1975 some shifting of academic staff has occurred among Departments with Economics, Psychology, Political Science and Geography gaining, Sociology decreasing, and other Departments holding relatively constant. The number of courses offered has also increased since 1975, from 326 to 358.

Research

As indicated in the Faculty's role statement, research is an increasingly important facet in Faculty development. This is reflected in the fact that the Faculty ranks relatively high across all Faculties in terms of funded research, particularly when it is recognized that much social science research does not require large grants, especially for capital equipment. Although there appears to be significant variation among Departments, in terms of overall volume of published output, the Faculty seems to be performing well and improving in this area of activity.

Observations and Recommendations

In spite of the enrolment declines noted above, according to workload indicators such as WSH per FTE or course enrolees per FTE, the Faculty as a whole carries a teaching load well above the University average. Its teaching role is major; in particular, it provides a broad range of service courses to students in other Faculties. The heavy service role in this Faculty, as well as in Science and Humanities, implies that these units are particularly vulnerable to program changes by other Faculties. It is important that the vulnerability of these units to sudden enrolment shifts be recognized.

Recommendation III.15.1

That budgetary and manpower reallocation decisions which are based upon enrolment data be sensitive to the relationship between enrolments in service teaching Faculties, such as Social Sciences, and changes in the programs of other, service-using Faculties.

* * *

As a Faculty, Social Sciences has a solid, if not outstanding, reputation for both its teaching and research efforts. Indeed, it has resources to continue to provide the quality of undergraduate and graduate courses, graduate supervision, special interest studies, etc. which presently exist or which are currently planned. The Ph.D. programs originally proposed in the development plan are in place; the Ph.D. in Sociology has been approved and implemented; the Ph.D. in Clinical Psychology has been deferred in favour of a less expensive applied program which combines academic studies with clinical experience; and the Ph.D. in Canadian History has been deferred until a clear market for the degree exists. The suggested M.A. in Public Policy and Administration and the interdepartmental M.A./M.Sc. in Industrial Relations have not progressed. They do not have high priority in the Departments, and hence additional academic staff resources would not be devoted to such a development. Thus, in terms of its teaching, research and academic program requirements, the Faculty appears to be adequately staffed, although some internal reallocation of resources among Departments will be necessary.

Recommendation III.15.2

That the academic staff resources currently assigned to the Faculty of Social Sciences not be altered unless significant enrolment changes occur or major program developments are approved.

* * *

Investigation of the individual Departments in the Faculty yielded information which offers guidance with respect to those Departments which appear to be in a position to benefit from additional staff resources and those which could absorb a modest decrease. Thus, it is possible that resources could be reallocated from one Department to another within the Faculty. Portions of full-time equivalent sessional positions could be collected from one set of Departments and reallocated as full or partial positions to one or several other Departments.

> Recommendation III.15.3
>
> *That the Faculty of Social Sciences be encouraged to reallocate resources internally from those Departments identified as being relatively well endowed to one of the Departments identified as being less well staffed.*

* * *

In addition to development plans and needs as described within the individual Departments, there are several areas of development which are Faculty-wide in scope, some of which may require the reallocation of academic staff resources.

In terms of the original Faculty development plan, the planned series of Social Sciences symposia and conferences, which have proven to be a solid blend of practical, policy-related and more purely academic issues, have been successfully inaugurated and are now well underway. The Faculty should be commended on its success in this area. The continuing organization and management of the series requires no additional academic resources.

The major current Faculty-wide priority is the proposed Social Science Research Institute. Its development has been slow. We believe the proposed Institute is a useful vehicle for organizing and managing interdisciplinary and team research, for purchasing time for faculty researchers, and for enhancing graduate student research opportunities. Its development should be pursued vigorously. The organization and development of the Institute are, however, likely to require the full-time efforts of one or more academic staff, in addition to the Dean and his office. Overall Faculty resources are probably sufficient to permit the Dean to second the appropriate faculty member to his office for the purpose of developing the Institute, but, as recognized in the preceding discussion, there will be short-run difficulties in making the internal Faculty reallocations needed to fill any gaps created by such secondment if the Faculty loses significant FTE resources through attrition/non-replacement.

Recommendation III.15.4

That the Faculty of Social Sciences accelerate the development of the proposed Social Science Research Institute.

* * *

A further area in which the Dean's office, and the Faculty as a whole, could use flexibility in resource allocation is Canadian Studies. There is presently significant Canadian content in many Faculty programs and course offerings, e.g. those contributing to the Canadian Studies minor in University College. These, plus the Chair in Canadian Studies, constitute a solid core upon which future activities, e.g. Canadian Political Theory, Arctic Archaeology, Canadian History (including the potential Ph.D.), can be built. While it has moved significantly in this direction, the Faculty should be encouraged to continue to place emphasis on this area of study and should seek ways of increasing the resources devoted to its development. This issue is also addressed in our discussion of and recommendations respecting University College (see Section 1 of this Chapter).

Recommendation III.15.5

That the Faculty of Social Sciences accelerate the development and expand the range of the Canadian Studies offerings in the Faculty.

* * *

16. FACULTY OF SOCIAL WELFARE

History

In 1962 the first formal action was taken to establish a social work education program in Alberta. After three years of study and research, a committee recommended that a new Master's degree program be authorized at one of the Alberta universities. In 1966 The University of Calgary responded favourably to the request to develop a Master of Social Work (MSW) program. In 1967 the School of Social Welfare was established, and the first group of students was admitted to the MSW program. The four-year BSW program was introduced in 1971-72. In 1975 the School became the Faculty of Social Welfare.

Organization

The Faculty does not have a departmental structure but operates with the Dean, an Associate Dean, two Assistant Deans, an Administrative Officer in charge of the Edmonton Program and a system of committees. Arising from its Provincial mandate as the only Faculty of its kind in the Province, the Faculty offers and administers programs in Edmonton, Lethbridge and other points in the Province, as well as at The University of Calgary.

Role

The Faculty's Development Plan indicates that there is a need for the Faculty to produce professionals who, in addition to practising their profession, will critically examine the institutions within which they practice. Three general aspects of the Faculty's mission are as follows:

1. The pursuit and communication of knowledge relating to social welfare, social development, social services, and the practice methodologies used by the profession of social work.

2. The preparation of students to practice in a wide range of social contexts.
3. The provision of service to the community in so far as resources permit.

Student-Staff Data

The Fall 1979 undergraduate enrolment in the Faculty was 263 full-time and 139 part-time students. Of these, some 70 full-time and 51 part-time students pursued their program in Edmonton. Also in Fall 1979 there were 26 full-time and 20 part-time graduate students studying programs in social welfare on campus in Calgary. The academic staff consists of 37.3 FTE.

Observations and Recommendations

The Faculty of Social Welfare has reworked its Development Plan and is to be commended for coming to grips with a number of crucial issues. It is appropriate for the Faculty to make a clear and unambiguous commitment to professional education. It is also apparent that for some time several emphases have existed, almost to the point of contridiction. The University should assist the Faculty to accomplish an integrated re-direction of its efforts so that the aims and practices are clearly understood by both faculty members and students.

Recommendation III.16.1

That the Faculty immediately take steps to ensure that the curricula for both the BSW and MSW programs reflect the commitment of the Faculty to education for professional practice with an appropriate mix of scholarly activity.

* * *

There appears to be a need for the expansion of programs concerned with all aspects of the 'healing sciences' in various parts of the Province. An integrated approach in this area by the Faculties of Medicine, Nursing, Social Welfare and Physical Education might usefully be explored. The Saskatchewan model, whereby a number of community education centres are established and staffed by a small core of resident instructors, would appear to be worthy of careful study. This may require some redirection of faculty effort, and also some retraining.

> Recommendation III.16.2
>
> *That the Faculty discuss with the Vice-President (Academic) opportunities which might exist for selected faculty members to enter into retraining programs which will enable them to respond to new demands and new opportunities such as the one mentioned above.*

* * *

The BSW program now consists of a basic core plus a number of options. In view of the extensive Arts and Science component of the program, it would be highly desirable to explore the pros and cons of moving formally towards a 2 + 2 program such as is currently being used in Management. In view of the fact that University College is undergoing an evaluation, it is desirable to keep in mind the possibility of including Social Welfare in a closer relationship.

> Recommendation III.16.3
>
> *That admission requirements for the BSW be re-examined in light of the evaluation of and planned developments in University College.*

* * *

Master's degrees in Social Welfare are widely recognized in Canada as signifying professional competence in the difficult settings into which graduates are thrust. It is, therefore, essential that these programs not be overly narrow. It appears that students and some faculty members experience difficulties with the current practice of requiring entering students to complete a BSW degree before being admitted to a one-year MSW program. The Committee is convinced that a more realistic procedure might be to admit MSW candidates to a two-year Master's program following an appropriate baccalaureate program. Some undergraduate requirements in social science areas could, of course, be specified. This would serve also to underscore the desirability of having both disciplinary and broad educational courses in the program of the MSW graduate.

> Recommendation III.16.4
>
> *That the Faculty of Social Welfare discuss with the Faculty of Graduate Studies entrance requirements for the MSW so that holders of baccalaureate degrees other than the BSW may enter directly into a two-year Master's program.*
>
> Recommendation III.16.5
>
> *That the Faculty make serious efforts to increase the opportunities for part-time students in the MSW program.*

* * *

The Faculty should continue to articulate clearly its commitment to professional education and at the same time strengthen its involvement in research. In fact, the clinical, community and policy-oriented programs could provide an appropriate setting for basic research, as has been demonstrated by other Faculties on campus. In addition, the Faculty should move as quickly as possible to formulate a proposal for a limited-enrolment Ph.D. program, for consideration by the Faculty of Graduate Studies. It should be noted that a Letter of Intent was filed in January, 1976, and extensive research on the potential for such a degree program has already been completed. Such a doctoral program would, in part, provide an appropriate outlet for research activity on the part of selected faculty members, and serve the needs of a limited number of advanced students.

> Recommendation III.16.6
>
> *That the Faculty develop a proposal for a Ph.D. program, for review by the Faculty of Graduate Studies. The program would have limited enrolment and would remain specifically research-oriented; the DSW or a similar advanced professional degree should not be pursued in the foreseeable future.*

* * *

A primary concern to the Committee is the apparent inability of the Faculty to come to grips with the mandate given to The University of Calgary to supply all the Social Welfare graduates for the Province, as well as to provide opportunities for the upgrading of practising professionals. This is the only Faculty in the Province and currently it is attempting to meet the need by operating satellite programs in Edmonton, Lethbridge and elsewhere. The Edmonton program now is larger than many separate Faculties and Schools in Canada and the wisdom of such an arrangement for the future is questionable unless appropriate funding is provided. Following many years without specific financial support for the Edmonton program, the Department of Advanced Education and Manpower recognized the additional costs involved with an increase of $50,000 in the base operating budget of the University in 1979-80. However, the annual operating budget of the Edmonton program was $377,000. The level of funding which the University can provide does not permit the Faculty to meet its Provincial responsibilities and to respond to requests for further program offerings outside Calgary.

Recommendation III.16.7

That The Universtiy of Calgary continue to seek clarification from the Department of Advanced Education and Manpower concerning the expectations and support levels deemed appropriate to permit the fulfillment of the current provincial mandate given to it in the area of Social Welfare education.

* * *

CHAPTER IV

PEOPLE AND RESOURCES

General Comments

During the discussion on individual Faculties (Chapter III), it became apparent that there were a number of important issues which transcended Faculty boundaries. The Committee therefore decided to group together in a separate Chapter topics affecting students, faculty, teaching, research, academic support, physical resources and off-campus initiatives. While we make no claim as to completeness, these are all matters germane to the successful functioning of this University, and the Committee hopes that by focussing attention on them in this way University-wide discussion of the issues raised will be encouraged.

It should be stressed that the nature of the Committee's work precluded it seeking formal input from bodies other than the Faculties. The views expressed in this Chapter are, therefore, the Committee's own and are not the result of formal submissions from concerned groups. Nevertheless, it is hoped that the matters addressed will be studied carefully by various sections of the University community, e.g. that the section on Students will be of special interest to the Students' Legislative Council and students generally, and the sections on Faculty, Teaching and Research to all members of faculty.

We hope, of course, that readers will consider the entire document and not focus too narrowly on specifics. Many topics discussed below have been touched upon in preceding pages or in the concluding Chapter, but no exhaustive cross-reference system has been used.

* * *

1. STUDENTS

This section outlines a number of issues related more specifically to students. To the extent that they are also covered elsewhere in this Report they are cross-referenced. In some cases, only a brief discussion is provided here because other recent University reports have raised these issues, although policy decisions may not have been made as yet. In other cases, clear recommendations for action are not given but directions for further study are suggested.

Admissions

The student recruitment and admission process is a vital first step in identifying young people with potential to succeed in post-secondary education so that their ultimate self-fulfillment may be enhanced by attempting to match the interests and abilities of qualified candidates with the programs that are best suited for their further development. Traditionally, The University of Calgary has not had an active recruitment program, and it may be that some impediments to admission, as perceived by potential students, have arisen because the University has concentrated its efforts on those individuals who have already taken the initiative in approaching the University. It is not surprising, therefore, that more than 80% of University of Calgary students come from the City of Calgary, and that some 20 high schools provide about three-quarters of our enrolment.

The University has already undertaken a number of initiatives dealing with various facets of the admission process: admission standards were reviewed during the past year; a new early admissions policy was put into effect in the Spring of 1980; the President appointed a Committee on Student Recruitment and Retention; and, the Richards' Committee Report on Student Services was made public this

Summer. Also, the Dewar Committee Report on the review of University College is expected shortly. The Richards' Committee recommended that a more comprehensive and better coordinated approach to recruitment and admission of students be adopted.

> Recommendation IV.1.1
>
> *That, in dealing with the Richards' Committee recommendation concerning the establishment of a University Entrance Office, GFC place particular emphasis on the perspective from which the potential student views the admissions processes.*

* * *

Counselling

Counselling at this University has been reviewed by the Richards' Committee on Student Services and by the University College Review Committee, although no action has been taken so far on either report. At best, it can be said that students are confused by the diversified nature of and numerous locations for advice on campus. In some cases, factual advice on course selections is all that a student wants or needs. Other students will require assistance in making decisions of a more complex nature. Then, many students will require personal counselling. To which University office will a student turn? In dealing with this issue, GFC should not lose sight of the need for academic counselling as well as other counselling services. The respective roles of University College and the Faculty offices should be clarified with respect to the former, and a decision made on the degree to which other necessary counselling activities should be decentralized within the academic units.

Recommendation IV.1.2

That high priority be given to elimination of the confusion experienced by students because of the current decentralized nature of counselling offered at this University.

* * *

Student Support/Scholarships

The primary financial aid mechanism for students at present is a loan program.[1] The Student Awards Office at The University of Calgary handles some 4,000 - 5,000 financial applications annually.

The Minister of Advanced Education and Manpower appointed the Grantham Task Force to address the proportion of costs of post-secondary education that should be borne by the student, and the adequacy of the existing financial aid programs. The University of Calgary filed a formal response to the Grantham Report, and the Department of Advanced Education and Manpower recently made public the Government's response to the recommendations contained in it. We look forward to increased financial assistance so that no qualified student will be prevented from attending university merely because of financial difficulties.

Unlike universities in many other jurisdictions, The University of Calgary has very limited scholarship programs stressing excellence. It is clear that more Alberta high school graduates, including some of the most outstanding, are offered and accept scholarships at universities in other provinces than the number of well-qualified students from other parts of Canada who are attracted to the Alberta universities. While programs which provide students with an opportunity to study in various parts of a country as large as Canada must be endorsed, competitive opportunities should also be made available here. We believe that if a university is to achieve greatness the finest students and faculty must be given the opportunity to work together. This matter has been discussed from a provincial perspective in Chapter I.

> Recommendation IV.1.3
>
> *That The University of Calgary develop a scholarship program which takes into account the need to attract outstanding students on a competitive basis.*

* * *

Residences

On-campus student housing is a vital component of university life and has a direct bearing on the University's primary functions. At present, The University of Calgary can accommodate 702 students in dormitory-style housing (Kananaskis Hall and Rundle Hall) and has an additional 250 self-contained 1-, 2- and 3-bedroom family housing units (Varsity Courts). Extensive waiting lists regularly exist for both types of accommodation. A recent Senate report to the Board of Governors indicates that The University of Calgary ranks a dismal 14th out of 16 Canadian universities surveyed with respect to the percentage of students who can be accommodated on campus. The Board of Governors has approved a proposal to the Government of Alberta to add a further 250 units ("bachelor" through 4-bedroom) which would increase on-campus accommodation to a modest 11.1% of the student body, a far cry from the 15+% already enjoyed by 8 of the 16 Canadian universities surveyed. So far the necessary funding guarantees have not been obtained.

Limited on-campus accommodation, when coupled with the high rental rates and the low apartment vacancy rate in Calgary, as well as the lack of a housing area adjacent to the University which offers private student-type accommodation, exacerbates the problems which potential students face. In this context, the enrolment bias toward City of Calgary residents is more easily understood.

Recommendation IV.1.4

That the Board of Governors continue to press for more on-campus housing for students in order to make the University more accessible to students from outside Calgary.

* * *

University Calendar

The University Calendar is one of the most important publications of the University. It is a formal record of courses offered, regulations of many sorts, a list of faculty members, committees and councils, etc. It is also regarded by students and counsellors as an important tool for course planning. Since it serves a variety of purposes it is difficult to produce a volume which meets all the formal criteria of a "record" and is also a readable document which advises students of their obligations and opportunities. We recognize the fact that regulations are far from simple, but we conclude that the current Calendar is simply too complicated to serve students well. No easy solution is on the horizon, but we wish to underscore the importance of the Calendar in providing accurate yet easily understood advice.

Recommendation IV.1.5

That the Vice-President (Academic) undertake steps to improve the usefulness of the Calendar both as to form and content and to implement appropriate changes without delay.

* * *

University Timetable

The University of Calgary continues to prepare its timetable with virtually no centralized control or direction. This has been a natural development as the University grew from a very small beginning with only a few programs and limited course offerings. The complexities of the current structure of program and course offerings, the interlocking nature of courses offered by several Faculties in certain programs, and the need to optimize both space and faculty as the institution seeks to mount new initiatives, will require a revised strategy.

Currently, the Office of Institutional Research is carrying out a study for the Vice-President (Services) on alternatives in classroom scheduling. The study is primarily confined to examining alternatives which might allow more efficient use of classrooms and seminar rooms. However, as this study moves forward, emphasis should also be placed on an examination of the timetable from the perspective of student needs. Should there be more late afternoon classes, more weekend classes, more downtown classes, innovative "packaging" in the form of "block courses"? The needs of part-time students also should be examined, with the objective of increasing the efficiency of the timetable.

This may require that established and time-honored timetable patterns be disrupted, if it can be shown that these represent an inefficient utilization of faculty time and/or space, or if it can be shown that certain course offerings normally attract few students because they are scheduled at times and places inconvenient for the students.

Reference is made elsewhere to the fact that the central University timetable is a primary institutional data base, but that the shortfalls in it at present detract substantially from its potential use as a management tool. (See Chapter II.)

Recommendation IV.1.6

> *That the study of alternative timetabling methods for more effective classroom use be enlarged in scope so that the Vice-President (Academic), in conjunction with the Registrar and the Office of Institutional Research, examine the current timetable structure to define directions for change to accommodate both current and future programs/courses so as to improve student access and the utilization of both faculty time and space.*

* * *

Job Placement

Notwithstanding financial assistance and scholarship programs, student employment, either on a part-time basis during the Fall/Winter Session or on a full-time basis from May through August, is likely to remain a major factor in the ability of students to continue their studies.

The University itself can provide attractive work opportunities for some students in ways which can be accommodated while students are pursuing programs of study. In addition, there are seasonal jobs to be filled on a full-time basis only in the summer. Casual student employment on campus has been promoted to some extent. The Employee Relations Department has identified the following areas as suitable for student employment: Food Services, Grounds, Parking, Stores, Cashiers, Technical Assistants, Library, Theatre, Maintenance, Caretaking, Pool Supervision and Animal Care. Student jobs are identified as those that can be restricted to students only, without requiring non-student personnel, to meet the necessary staffing level which has to be maintained by the University. These are specifically excluded from the collective agreement with the Alberta Union of Provincial Employees. A recent survey covering the past year shows that Physical Plant, University

Housing, the Bookstore and Food Services provided 294 part-time and 133 full-time jobs during the Summer period, and 252 part-time jobs during the Fall/Winter period.

Recommendation IV.1.7

That The University of Calgary provide opportunities for part-time and full-time employment of students wherever feasible, and where the jobs to be filled are suited for student employment. It is recommended further that a mechanism be developed to coordinate on-campus advertising for these positions.

* * *

Should The University of Calgary embark on co-op programs (see Section 7 of this Chapter), the University would have to assume job placement responsibilities as an integral part of these programs. This would provide an opportunity to offer more general job placement services to students, including the on-campus opportunities referred to above. Such a move has already been recommended by the Richards' Committee.

Recommendation IV.1.8

That The University of Calgary establish a Student Employment Office and take more initiative in coordinating the student search for employment, and that this Office be combined with any University office that may be established to coordinate job placement for students in future programs.

* * *

Like most other universities, The University of Calgary has Faculties and programs with enrolment limitations. The reasons for applying quotas are numerous, and include: the question of appropriate (or optimum) size of the student body, the balance among the disciplines in the University, resource considerations (especially space and faculty), manpower needs, and pedagogical preferences. In general, quotas may be applied at a number of points within the University; at the level of the institution, the Faculty, the year of program, the major/specialty, or course/section.

The 1980-81 Calendar identifies the Faculties of Engineering, Environmental Design, Law, Management, Medicine, Nursing and Social Welfare as having student enrolment limits. In addition, enrolment in certain courses, such as Geology in the Faculty of Science, is limited, with preference being given to Geology/Geophysics majors. The Vice-President (Academic) exercises discretionary authority to limit section sizes in selected courses where Deans can justify this on pedagogical grounds, or where strict space limitations apply (e.g. fixed student stations in laboratories). He also authorizes the termination of further registration in individual courses from time to time when unforeseen student demand exceeds the capacity of the academic unit involved and where no last-minute arrangements can be made to accommodate further students without losing an acceptably high quality of education.

The basic principle followed is stated in the University Calendar:

> While every effort will be made to accept every qualified applicant, enrolment in The University of Calgary's courses and teaching units must necessarily be limited to the number of students that can be accommodated by the resources available and consistent with an acceptable quality of education.

Admission to the Faculty of Graduate Studies is dependent not only upon applicants meeting the minimum admissions qualification, but upon the availability of University resources for the particular field of study of the applicant. Virtually every graduate student at the University is associated with a staff advisor or supervisor, and the number of staff members available for this task in specific areas is limited. Fully qualified graduate student applicants may, therefore, not be admissible in a particular year because of the unavailability of appropriate supervisory resources.

Recommendation IV.1.9

> *That GFC undertake a comprehensive review of the principles governing enrolment quotas in Faculties, including a review of the current quotas, with the objective of reconfirming them, revising them or removing them, as appropriate to each unit.*

* * *

With the development of public colleges in Alberta and the work of the Council on Admissions and Transfer, a larger proportion of high school leavers commence university-level work at a college and subsequently transfer to one of the Alberta universities. Many students complete one full year at a college, and some complete up to two years. The University of Calgary monitors the performance of transfer students in senior courses, and has found that their performance is generally equivalent to that of students who have completed all of their work here. Transfer students complicate the admissions process in Faculties with limited enrolment because of space or other resource restrictions, but every effort is made to ensure that equal opportunity is provided to such students, subject only to the quality of their performance. In view of the rising percentage of transfer students, their access to quota Faculties should be reviewed.

Recommendation IV.1.10

> *That GFC request a report from each Faculty with an admission quota, indicating*

> *how transfer students (especially from Alberta colleges) are accommodated equitably in their admission procedures. It is recommended further that the University Calendar indicate clearly the requirements/procedures for admission to a senior year of a quota program.*

* * *

The University now has several years of experience with the Effective Writing Qualification Test, and during this period the manner in which students who fail this test on admission can improve their writing skills and satisfy this requirement has been modified, with a progressive shift of student enrolment to first-year English courses having a composition component. The introduction of a further regulation, that students who fail to satisfy this requirement within one year of first registration be permitted to register only in an appropriate English course, will have its first impact this Fall.

> Recommendation IV.1.11
>
> *That GFC request a report as soon as possible on the impact of the one-year time limit for students to satisfy the Effective Writing requirement.*

* * *

Student Population: Out-of-Province and Foreign Students

The University of Calgary continues to draw most of its students from southern Alberta. Thus, in 1979-80 a total of 8,657 full-time students gave Calgary home addresses and 784 listed other southern Alberta home addresses. Only 336 full-time students gave northern Alberta home addresses, leading to a total of 91.1% of our full-time student population from Alberta. A further 7.1% of the full-time student body gave home addresses in other parts of Canada.

The concept of a university implies a free exchange of knowledge and ideas which transcend racial and political boundaries. It can be argued that The University of Calgary now attracts too few foreign students, particularly at the undergraduate level, and that the predominantly Alberta student body is short-changed because of an inadequate exposure to the views and ideas of other countries and cultures. A Province as well-endowed as Alberta, which is looking forward to playing an increasingly important role on the international scene, should also ensure that it provides an appropriate level of educational opportunity for students from other countries (including the less-developed), particularly if this can be achieved without denial of educational opportunities to Alberta students. The foreign student population of the mid-70's was perceived by some as an over-supply to the alleged detriment of Alberta students; the problem of the 80's at The University of Calgary is the rapidly declining number of foreign students.

At The University of Calgary the peak visa student enrolment occured in the Fall of 1975, when 798 full-time undergraduate visa students were enrolled (7.9% of the total full-time undergraduate student body). It can be shown that the modest decline in total University enrolment since 1975 has, in fact, been due primarily to the decline in visa students. Various factors since then have taken their toll: an increase in the minimum English-language proficiency requirements for admission (TOEFL score) introduced by The University of Calgary; introduction of the differential fee; and a general tightening of Federal immigration regulations. The number of full-time undergraduate visa students at The University of Calgary has declined continually since 1975, to 295 in 1979-80 (3.0% of the full-time undergraduate student body). A projection of the current admission rate would reduce this to 2.0% or less by 1981-82.

Graduate programs are inherently more international in character, and it should be noted that the full-time graduate student body at The University of Calgary in recent years has been composed of approximately 20% visa students (196 out of a total of 933 in 1979-80).

It is important to mention that the decline in visa students has been accompanied by a corresponding decline in students with landed immigrant status (full-time students in this category down from 905 in 1975-76 to 674 in 1979-80).

Few Canadian post-secondary institutions have come to grips with policies concerning foreign students. The University of Calgary should re-examine its foreign student policies in those areas where it has a clear mandate and a responsibility to act.

At its meeting in March, 1976, GFC adopted the Report on the Admission of Non-Canadian Students to The University of Calgary, which included a statement of principles, as well as policy recommendations, and suggested administrative procedures.

Recommendation IV.1.12

That, in view of the alarming decline in the number of undergraduate visa students in recent years, GFC review the report adopted in March, 1976, in order to determine what action might be taken for The University of Calgary to serve provincial, national and international interests and needs more adequately.

* * *

Student Space

It has been recognized for some time that The University of Calgary campus is underdeveloped with respect to recreational space, and leisure-time and club facilities for students. MacEwan Hall was designed to meet the needs of a student body of approximately 6,000, which the

University attained in 1968-69. The Graduate Students' Association has never had suitable space in which to develop extra-curricular programs. While not a student-related issue, the Faculty Club is similarly inadequately housed and occupies valuable academic space. A sense of University "community" cannot develop until an adequate amount of designated and suitably designed space is made available to these constituencies.

Recommendation IV.1.13

That the Vice-President (Services), in cooperation with the Students' Union, the Graduate Students' Association and the Faculty Club review the prospects of expanding MacEwan Hall as soon as possible in order to provide an adequate amount of space for these groups, and that the University attach a high priority to this development.

Recommendation IV.1.14

That the Vice-President (Services), in cooperation with Campus Recreation and the Faculty of Physical Education, develop a plan to increase the amount of space available for recreational use, without impinging on the increasing academic program requirements of the Faculty of Physical Education.

* * *

Part-Time Students

The Province of Alberta has the lowest participation rate of 18-24 year-olds in Canada for part-time students. At this University, part-time evening enrolment in 1979-80 was less than it was ten years ago, enrolment having peaked in 1972-73. Part-time day enrolment has been relatively stable since 1974. About 70-80% of the Spring/Summer Session students are also regular Fall/Winter Session students, that is, they are not new "off-campus" part-time students.

The low part-time participation rate may suggest that the needs of part-time students are not being met. This should be examined more closely, particularly from the student perspective, to see to what extent students find it possible to proceed toward a degree on a part-time basis. This may require relatively stable multi-year scheduling of certain course offerings and a needs assessment to see whether, for example, there should be more evening course offerings in the Spring/Summer Sessions, etc. The role of the recently established GFC Committee on Special Sessions in this area is noted. (See Section 7 of this Chapter).

Academic Program

A review of the University Calendar suggests that some baccalaureate programs may be unnecessarily restrictive with respect to those courses from other Faculties which may be taken for credit. Bearing in mind the need for a broad general education, as well as the requirements for specialization, a review of the breadth of academic programs should be undertaken.

Recommendation IV.1.15

That GFC, through its Curriculum and Academic Review Committee, undertake a review of the breadth of all baccalaureate programs to ensure that students are not restricted unreasonably in their choice of options.

* * *

Honors programs in Canadian universities once provided the standard entry to post-graduate studies before four-year programs with subject specializations became common. At The University of Calgary total full-time enrolment in honors programs has declined by about 50% in the last five years, from 294 honors students in 1974 to 157 in 1979. This suggests that the concept underlying these programs should be reviewed.

Recommendation IV.1.16

That GFC review the concept and structure of the traditional honors programs, in the light of declining student interest and the development of a full range of four-year baccalaureate programs with specializations in designated major fields.

* * *

2. FACULTY

The University of Calgary Handbook for Faculty sets down three criteria which are relevant to appointment, promotion and tenure in the University; namely, teaching, scholarship/research and service. The Handbook then goes on to elaborate on these criteria and their importance, as follows:

> 2.2 Teaching is a major University function. Evaluation of teaching performance and effectiveness should include all ways the teacher interacts with students: lecturing, discussion, direction, encouragement and advising. The general reputation enjoyed by the teacher among students and informed peers will form part of such evaluation.
>
> 2.3 Scholarship, research and other creative activity should normally be measured by the quality of the candidate's work, recognizing the appropriate media for different disciplines. The primary concern of the individual and the University will be the importance of high quality work. Evidence of reputation may be obtained from informed peers within and without the University.
>
> 2.4 Since the University is a community of scholars, responsible for its own government, merit in the area of service should be measured by the faculty member's record of performance through participation in academic government in matters relevant to the progress and welfare of the institution. Contributions to the community and the nation, particularly in his scholarly or professional role (for example, service on a royal commission or on a national body, consultative work and community service work which brings distinction to the University as well as the individual) will be taken into account.

However, we recognize explicitly that, within the detailed framework provided by the Handbook, a faculty member's responsibilities in terms of teaching, scholarship and service are not defined or interpreted in exactly the same way in all Faculties or even in all Departments within a given Faculty. Although the fundamental expectation with respect to teaching (the ability to profess a discipline competently and, especially in professional Faculties, to extend this to the development of professional skills) is the same across all Faculties, other important and necessary differences exist. The various Faculties and Departments assess and weigh differently the relative importance of activities devoted to graduate and undergraduate instruction, service courses and Departmental major instruction, teaching and graduate supervision, etc. Similarly, joint courses or other co-operative interdepartmental/interfaculty teaching efforts, continuing education courses, professional development courses, outreach activities and practica or clinically-based courses, are of different degrees of importance to different Departments and Faculties and are, therefore, evaluated differently by them.

With regard to scholarship, research and other creative activity, pure and applied research which results in papers and published works, which have been subjected to peer review and assessment, normally is expected of a faculty member by most Faculties and Departments. However, in some Faculties and Departments, or for certain individuals within them, this criterion may not always be applicable. Performances, compositions and exhibitions in the fine arts, for example, are forms of creative activity which are legitimate and necessary to the advancement of the discipline. Similarly, contract research, consulting work and professional practice in fields such as engineering, law, architecture and medicine, are creative activities critical to the intellectual development of disciplines and academic Departments and the teaching effectiveness and credibility of members of faculty. The latter types of creative activity will be given a high degree of importance in some units and valued modestly, if at all, in others.

With respect to service, the expectations of a faculty member's performance in Departmental, Faculty and University affairs are, with one exception, relatively similar and consistent across Departments and Faculties. The exception appears to exist in the relief in teaching responsibilities which is given to members of faculty who assume Departmental or Faculty administrative positions, such as Head, Division Chairperson, Program Director, Area Chairperson, etc. There appears to be significant variation in practice in this respect across Faculties and Departments. It is important that we achieve more consistency across the University with respect to the trade-offs between teaching and administrative responsibilities and a better understanding of the circumstances in which significant deviations from the norm occur. We believe it is time to examine carefully the extent of the participation of faculty members in administrative posts and the cost of such participation in terms of teaching, scholarship and service. Also, with respect to service external to the University, i.e. community and professional service, the practice and expectations of a faculty member's performance differ markedly across Faculties and Departments. In some units, relationships with local, provincial or national professional associations or institutes, accrediting or licensing boards etc., are important. In others, relationships with various government agencies, community organizations and private industry are of significance. It must be recognized that the maintenance and enhancement of these relationships and other external service activities, while often very important, have a very high opportunity cost in terms of the teaching and, particularly, the research effort foregone.

The major point made in the comments above is that the three criteria described in the Handbook are applied differently in different parts of the University and that this fact is of critical importance in interdepartmental and interfaculty comparisons and in informing members of faculty of the expectations respecting their performance. Although it is almost certain that these expectations and the weights or degrees of importance attached to the three criteria will change through time, it is necessary to ensure that particular Departmental and Faculty expectations at any point in time are explicit and clearly understood by individual members of faculty within each unit. There are limits to the weights which can be attached to the criteria and to the rates at which strong performance in one area can be traded off against weak performance in another. For example, a weight of zero in any one of the three should not be permitted. Further, because of the structure and role of the General Promotions Committee, it is necessary that the expectations and practices of individual units be understood by other Departments and Faculties.

The recent request by the Vice-President (Academic), as the Chairman of GPC, that Deans provide written statements describing the procedures by which individual Faculties apply the criteria, and their individual weighting systems, is a valuable first step in this regard. The role of GPC in discussing and approving these statements will contribute subsequently to more effective dissemination of this information. We feel that it is possible to improve the way in which we communicate and rationalize these practices, procedures, etc. among Departments and Faculties. The important thing is that members of all Faculties know how others apply the criteria, not that they apply them in the same way.

We recognize that these are not descriptions of deterministic, quantitatively invariant systems; they are frameworks within which the particular strengths of individual members of faculty are assessed. The possibility of units learning from one another, of increasing understanding of other units and of improving cross-Faculty and Departmental debate makes this recommendation the more worthwhile.

Recommendation IV.2.1

That the Chairman of GPC request the Deans of all Faculties to provide to GPC and members of faculty a written description of the manner in which they apply the criteria for appointment, promotion and tenure (teaching, scholarship, service) described in the Handbook, such description to include:

(a) a statement of the relative importance which the Faculty attaches to each of the three criteria;

(b) a description of how the unit interprets the criteria (teaching, scholarship and service), e.g. the various activities which the unit defines as legitimate and appropriate forms of the criteria;

(c) a description of the expectations which the unit has of a faculty member's performance in each of the three areas, including the ways in which these expectations might change with rank.

* * *

It is important to have efficient and effective communication and a flow of information within the University. In particular, we believe that the position and role of Department Heads in decision-making needs to be strengthened. Their collective experience and judgment is a resource which needs to be utilized more effectively. Some of the recommendations of the *ad hoc* Committee on Appointment, Authority and Responsibility of Department Heads (Schonfield Report, 1970), particularly those stressing the importance of open communication, information flow and consultation between Heads and Department members, appear to have been only partially implemented in some parts of the University. There is evidence that in some instances communication between Deans and Heads and between Heads and faculty is poor. This, and the variability in communication effectiveness which appears to exist across the University, gives cause for concern. Perhaps the recent GFC discussion and actions with respect to the procedures for appointment of Deans and Department Heads were stimulated in part by concerns arising from poor communication. Following discussion of this matter in April, 1980, GFC reaffirmed the status of the Schonfield Report as the governing document respecting the terms of reference of Department Heads. In particular, GFC defeated a motion to create an *ad hoc* committee to re-examine the question of procedures for the appointment of Heads. In light of that debate and the motions respecting appointment procedures which were adopted, it is felt that the recommendations of the Schonfield Report should be re-examined by certain academic units in order to assess how effectively they have been implemented.

> Recommendation IV.2.2
>
> *That individual Faculties and Departments review their procedures for dealing with the recommendations of the Schonfield Report, particularly those dealing with effective communication and the need for consultation.*

* * *

Within the framework provided by the Schonfield Report there are other actions which can contribute to this objective. Department Heads are critical transformers between individual members of faculty and more senior levels of University administration. They have an ongoing need for information on a range of issues, academic policy, finance, space, etc., and for improved access to all levels of administration. The Committee has learned that in some units regular meetings and frequent communication between Heads and senior academic administrators is less than satisfactory. In units where this is the case, the situation should be rectified.

Recommendation IV.2.3

That a schedule of regular meetings between a Dean and Department Heads be instituted and, further, that each Dean provide for regular (if not frequent) meetings between Department Heads and the President, Vice-Presidents and, where relevant, Associate Vice-Presidents, for purposes of information exchange and consultation. (In units where such meetings are already occurring, they should be continued and, where necessary, made regular).

* * *

In addition to regular contact with those involved in academic administration, Department Heads need improved communication with other administrators in the University.

Recommendation IV.2.4

That the Dean of each Faculty arrange for formal meetings between Heads of Departments and appropriate administrators, particularly those in support services such as the Library, the Bookstore, Communications Media, and the Office of Institutional Research, on an ad hoc basis as Faculty and Departmental needs dictate.

* * *

To many people the Department Head is, or ought to be, perceived as the "personification of the discipline". If the position of the Head can be strengthened by ensuring that Heads are better informed and more fully involved in academic decision-making, it will be possible to convince those members of faculty with both academic credibility and leadership ability to accept the position of Head. The Committee believes that senior professors have an obligation to the University community to assume the position of Department Head and other administrative offices so that more junior members of faculty may concentrate on teaching and scholarship.

Strengthening the position of the Department Head may permit and facilitate a gradual devolution to Heads of some of the detail work currently being performed by Deans and other senior administrators. It may also help to reduce the need for Faculty and Departmental committees which increasingly have become involved in administrative matters rather than setting academic policy.

Nature of Faculty Appointments

In January, 1973, the Board of Governors of the University formally adopted the "80/20 Guideline". At the time of its implementation, the rapid growth in enrolment experienced in the 1960's had ended and future enrolment was uncertain. The guideline was intended to provide the University with the flexibility to maintain its commitments to full-time academic staff in the face of possible enrolment declines and financial uncertainties. The original aim of the 80/20 guideline was to produce a situation in which 20% or more of the academic staff of the University would be on limited term appointments. Subsequent revisions to the guideline, specifically the practice which provides for a member of faculty with a limited term appointment which is expiring to be considered for a probationary appointment, have changed the intent and result of the guideline.

More recently, student preferences have shifted, but overall enrolment has stabilized and University funding, while seriously constrained, is less firmly tied to student enrolment. Further, the recent moves to centralize academic vacancies in the Office of the President and the creation of the Position Allocation Committee to advise on the reallocation of these vacancies, gives the University the flexibility to deal with the issues to which the 80/20 guideline was originally a response.

> Recommendation IV.2.5
>
> *That the University administration consider the extent to which the 80/20 guideline is required, given that the new position centralizing and reallocating measures appear to be working effectively.*

* * *

In an era of financial restraint, the University should search for innovative ways to optimize the use of its budget allocations for teaching faculty. GFC and the Board of Governors have recently approved in principle the creation of a continuing, part-time appointment category. Implementation will take place when we have determined the manner in which non-salary benefits can be provided. This new type of appointment will be restricted to tenured members of faculty. If the system works well, however, it may be possible in future to extend eligibility to non-tenured members of faculty.

As a result of the Krueger Committee Report (February, 1979) the University has initiated moves designed to create more flexible terms of appointment which are more sensitive to particular needs and problems of Faculties and Departments. For example, individual faculty positions which carry a major teaching emphasis or which permit "seasonal" teaching and/or supervisory loads can enhance a Department's ability to respond to fluctuations in demand for various courses while simultaneously recognizing differences in faculty members' needs, interests and abilities. Similarly, appointments which carry a major research emphasis will enhance the ability of Departments and Faculties to assemble research teams with sufficient depth to develop an area of excellence. Such appointments will be facilitated by full or part-time secondment to government or private organizations. The University should continue to develop and expand the implementation of appointments of this type.

Government and private industry can provide the opportunity for members of University Faculties to combine an academic career with an outside career in research or professional practice if the appropriate arrangements are worked out. Similarly, government and industry are sources of research expertise and highly-skilled, experienced practitioners, which the University ought to be able to use in order to expand its teaching resources and research capabilities. This issue and the inherent possibilities will become increasingly important as the University Research Park is developed. This issue is addressed further in Section 4 of this Chapter.

Recommendation IV.2.6

That the University, through the Office of the Vice-President (Research), develop relationships with government and industry with a view to creating the conditions necessary for an exchange of personnel which will permit members of faculty to combine their academic careers with other careers.

* * *

Joint, interdepartmental and interfaculty appointments which permit an individual to contribute to the teaching, research and supervisory requirements of more than one academic unit, have long been possible within the University. Such appointments have not, however, been used extensively. We believe that some of the teaching requirements of many Departments can be met by purchasing teaching services from other units and through increased use of joint appointments, particularly with respect to present members of faculty.

> Recommendation IV.2.7
>
> *That the University encourage the use of more joint appointments and that Department Heads and Deans seek ways to expand the use of such appointments.*

* * *

As a result of a recommendation in the Krueger Committee Report, GFC has made a commitment to the continuing professional development, upgrading and retraining of members of faculty, in order to prepare them to play new teaching and research roles as needs arise and as program requirements change. Although the University already has a variety of assisted and unassisted leave programs to which this new development is supplemental, we feel this recommendation is important and that the University should proceed to implement it as quickly as resources permit. While the Vice-President (Academic) has made temporary financial resources available to assist small Departments and Faculties on an *ad hoc* basis in the past, these resources often have been used to fill gaps in a teaching or research program created by sabbatical or other forms of assisted leave. The Vice-President (Academic) should continue to allocate resources for this purpose but should ensure that that the availability of such resources and the range of purposes for which they can be made available is clearly understood by all Deans and Department Heads.

Recommendation IV.2.8

That the Vice-President (Academic) develop, for approval by the Board of Governors, a plan for faculty upgrading and retraining.

* * *

3. TEACHING

As indicated in the preceding Section of this Chapter, teaching is a major University function and the University is committed to doing it well: "The University will maintain policies that promote excellence in teaching and learning" (Development Plan, 1976-1985, Objective 5.0, p.14). Despite advances in modern technology, the teacher remains the essential element in the transmisson of knowledge within the University. Furthermore, the university professor is the principal institutional means for the storage and retrieval of knowledge. In addition to the development and maintenance of challenging and innovative programs, the University must set high intellectual standards in all of its courses and insist that each faculty member's teaching performance is at an acceptably high level. The Schonfield Report among other documents made clear that Department Heads and equivalent administrative officers, as well as Deans of Faculties, have a responsibility to familiarize themselves with the quality of the teaching performance of their faculty members, taking into consideration all ways the teacher interacts with students, with the view of encouraging excellent teaching, assisting faculty members to improve their teaching, and issuing clear warnings where teaching performance is inadequate and shows no improvement over time. The teaching performance of facuty members should be documented clearly in writing in the annual assessment form prepared by the Department Head and submitted to the Dean, and communicated by copy to the faculty member.

The application of the University promotion procedures should demonstrate that teaching performance is a very important factor bearing on advancement through the ranks. Given the complexity of the teaching/learning process, its effectiveness should be monitored in a manner which ensures that the views of senior colleagues whose teaching skills are acknowledged, and the views of students, are considered when the Department Head assesses teaching performance. It is recognized that good teachers welcome critical assessment of their performance, since they regard the objective of such assessment as something they strive for -- improved teaching.

Poor teaching cannot be tolerated; if it persists following adequate warning and counsel, Department Heads and Deans have a responsibility to recommend dismissal of the faculty member for 'good and sufficient cause' ("persistent neglect of a faculty member's duty to his students. . . .", Handbook for Faculty).

While it is expected that the University community would generally subscribe to the above emphasis on high quality teaching, steps should be taken to ensure that these ideals are translated into practice in a consistent manner. Recommendation IV.2.1 already deals with the manner in which Faculties apply the criteria for appointment, promotion and tenure. The Development Plan, 1976-1985 states that by University policy "it will be the continuing responsibility of individual Faculties, with appropriate student input, to generate and apply methods of evaluation of teaching effectiveness". We believe that the evaluation of teaching effectiveness requires more attention at the University level to ensure that this University policy is carried out consistently, and that the input of students is included in this assessment.

Recommendation IV.3.1

That the President request the Deans of all Faculties to file with GFC a description of the manner in which teaching is being evaluated in their respective Faculties, such description to include an indication of how student assessments of teaching are being included.

* * *

One of the Standing Committees of GFC is the Instructional Methodology and Development Committee, with the following terms of reference:

(i) To encourage, where appropriate, interfaculty research into learning.

(ii) To organize and assist in the funding of conferences on instructional methods.

(iii) To receive and assess grant applications for research and development concerning instruction, and to transmit such applications to the Office of the Vice-President (Academic) for appropriate action.

(iv) To prepare a directory of resource personnel and aids on instructional methodology and development.

The IMD Committee has pursued its mandate in recent years with access to relatively limited funds ($10,000 per annum in 1979-80 and $11,000 in 1980-81). The argument is frequently heard that Faculties themselves are already providing instructional development services specifically suited to their discipline(s). Nevertheless, the IMD Committee continues to organize and manage a number of well-received workshops each year. A confidential referral service for instructors seeking assistance has not been used extensively. The Committee has been reluctant to associate itself with the assessment of grant applications for research and development concerning instruction because of the concern to be identified only with teaching improvement in a collegial setting. Some grants in this area are being received annually through the Innovative Projects Fund of the Department of Advanced Education and Manpower.

Recommendation IV.3.2

That the IMD Committee undertake a periodic review of the instructional develop-

> *ment services that are being provided through Departments and Faculties, and that this information be reported to GFC.*

Recommendation IV.3.3

> *That the Executive Committee of GFC review the terms of reference of the IMD Committee, in consultation with the present Chairperson and recent past Chairpersons of the Committee, in order to make the work of the Committee as effective as possible.*

* * *

Graduate Assistants (Teaching) play a vital role in the teaching programs of Departments and Faculties which have postgraduate programs. Not only do they gain valuable teaching experience which is an integral part of their post-graduate experience, but they assist Departments with large undergraduate teaching loads to meet them in a cost-effective manner. The GA(T) stipends are an important component of graduate student support.

The Fall, 1977, data showed that approximately 11.5% of the total section hours of instruction of the University were met by GA(T)'s. The University should ensure that inexperienced GA(T)'s receive some instruction in teaching methods appropriate to their discipline and to the type of instruction in which they will be engaged, e.g. laboratory, tutorial, lecture, etc.

Recommendation IV.3.4

> *That the Vice-President (Academic) request all Deans to report to him on the procedures used within their respective Faculties to provide instruction in teaching methods to Graduate Assistants (Teaching).*

* * *

For a number of years after obtaining autonomy, The University of Calgary continued with the policy, inherited from the University of Alberta, whereby students who had failed to obtain a passing grade in a course because of poor performance in a final examination were granted the priviledge to write a supplemental final examination, provided their performance had been sufficiently close to a passing grade to warrant this. In 1966 The University of Calgary abandoned this concept, thereby requiring all failing students to repeat an entire course if they wished to attempt to obtain a passing grade in it. The University should examine whether such second opportunity to sit a final examination should be provided, in the context of policies and experience in this matter at other Canadian universities.

Recommendation IV.3.5

That the Curriculum and Academic Review Committee of GFC review the University's current policy precluding the use of supplemental final examinations, to establish whether it is consistent with the academic goals of the University and whether it is in the best interests of students.

* * *

4. RESEARCH

The responsibility for the transmission of knowledge is coupled directly with the responsibilities for the generation of new knowledge, and with its application in the broadest context. The criteria for the appointment and promotion of academic staff, as defined in the Handbook, must continue to reflect this three-fold mission (see Section 2 of this Chapter).

This section is concerned with the further development of the research profile of the University. The term 'research' is used generally, and includes all forms of basic, applied and mission-oriented investigations, all forms of reflective inquiry and scholarship, all creative activity in the fine arts, etc.

The research income at The University of Calgary is increasing, and some significant new trends are to be observed. In the year 1978-79 the total research income derived from grants, both national and provincial, and contract work, was close to $8-million, and in 1979-80 it was nearly $11-million. Up to July 31, 1980, the research income in the fiscal year 1980-81 had already reached $10¼-million. In the 1979-80 period, Provincial Government sources and contract research funds increased significantly.

While the figures given above are creditable for a young University in times of general fiscal restraint, they are not yet adequate when compared with older and more prestigious institutions of similar size. Although comparisons with U.S. universities are difficult because of the large overheads accompanying grants as well as contracts, it would be worth noting that such universities as Stanford and Washington (Seattle) have research incomes well over $100-million annually.

Recommendation IV.4.1

> *That the Univeristy set as a target the rapid development of its research income up to five times its present level, in 1980 dollars, in order to meet its obligations with respect to the generation and application of new knowledge.*

* * *

While not all research activity is costly, e.g. a scholar working on a book manuscript may only need access to a good library and time to work in it, in most areas, lack of funds for equipment, research assistants and associates, and consumable supplies is a major limiting factor to scholarly productivity. Since the University can provide only very basic support for research, faculty members must look to external agencies for extensive grant and contract support, particularly if the research is costly. Another important consideration is the availability of suitable space for research.

Recommendation IV.4.2

> *That The University of Calgary ensure that space allocations to Faculties adequately reflect the amount and quality of space needed for first-class Faculty research productivity.*

* * *

Information on the reseach capability of the University, as well as the research under way and being completed, should be available to the public in a systematic form. The Research Grants Office once produced a Research Inventory which was updated periodically, but this was abandoned because of increasing costs. This project should be reinstituted, using word processing methods, to develop an easily managed and well indexed profile of research expertise at the University. Information on the publications of faculty members should similarly be made available, with advice as to how copies might be obtained. This could be done through appropriate modification of the annual report required by the President's Office of every faculty member. In addition to making this information available in a readily accessible form on campus, e.g. in the University Library and the University Bookstore, it should be made available in a downtown location if and when the University opens such office (see Chapter IV, Section 7). Appropriate direct marketing arrangements for pamphlets, books, journal issues, etc. based on faculty research, published by associated institutes or produced by a University press, if such were established, could also be made through this office. Such an outlet should be located in a downtown setting with a high pedestrian traffic density.

Recommendation IV.4.3

> *That the Vice-President (Research) ensure that the Research Grants Office produces a Research Inventory which can be updated regularly, and that this inventory of research interests and capabilities of academic staff be made available to the public. Similarly, the published results of University scholarship should also be drawn to the attention of the public in a systematic way.*

* * *

The Heritage Foundation for Medical Research will boost the research income in the Faculty of Medicine, and to a lesser extent also in the Faculties of Science and Engineering and possibly some other Faculties. There is need now, if Alberta is indeed to become the 'brain centre' of North America, for a similar trust income to be available for the other basic sciences and engineering. There is a further need for the University to maintain an appropriate balance between basic and mission-oriented research, and between research in medicine, the sciences and engineering on the one hand, and the social sciencs, the humanities, education and the fine arts on the other. External grant and contract support for research is clearly less available in this last category. Research in these areas is none the less of great importance, and the University has a responsibility to ensure that it is stimulated. An increase in the number of Social Sciences and Humanities Research Council (SSHRC) applications would be highly desirable. Archaeology is at present bringing in the lion's share of the SSHRC funding to the University, partly, of course, due to the high travel and operational costs of this type of work. The quality of the work is also now being recognized.

> Recommendation IV.4.4
>
> *That the Vice-President (Research) encourage faculty members in the social sciences, the humanities, education and the fine arts to generate high quality applications for research grants and fellowships.*

* * *

The performance of some Faculties with respect to applications for Killam Resident Fellowships, and subsequent awards, also deserves comment. Over a five-year period a total of 161 applications has been received and 71 awards made. The Faculties of Continuing Education, Environmental Design, Medicine, Nursing, Physical Education and Social Welfare together have filed a total of 5 applications, of which one was successful. The number of applications/awards for the other Faculties have been as follows: Education - 10/2; Engineering - 13/10; Fine Arts - 11/3; Humanities 17/4; Law - 2/1; Management - 2/1; Science - 53/25; Social Sciences - 48/24. The argument is sometimes presented that, in the areas other than science and engineering, scholars need access to a good library and release-time for concentrated periods of scholarship. The number of applications for Killam Resident Fellowships from other Faculties, taking into consideration their relative sizes, is not indicative of much unsatisfied demand for release-time Fellowships for scholarly projects. Only the Faculties of Science and Social Sciences have established application rates approaching twice that which would be expected relative to their respective numbers of full-time continuing academic positions. Faculties where such release-time is important for scholarly productivity should ensure that a sufficient number of well-developed applications are submitted regularly. Those Faculties experiencing a success rate significantly below the overall 5-year average of 44% should endeavour to improve the quality of the Fellowship applications presented.

Faculties currently deal with research promotion and research development in various ways. The Faculty of Social Sciences has recently appointed a Faculty Officer with specific responsibility for research. The Faculties of Humanities and Science have established Research Committees. In some other Faculties, the Department Heads, meeting in committee with the Dean, have assumed this function. It is believed to be desirable that all Faculties focus on their collective research endeavour, providing for a channel of communication and acting as a stimulus to further research development. The long-term implementation of the policy for the development of at least one endowed Chair in each Faculty will also help to encourage research.

Recommendation IV.4.5

That all Faculties review their current procedures with regard to research development and research promotion, and if appropriate, strengthen these procedures.

Recommendation IV.4.6

That Faculties bear in mind the long-term policy of the endowment of at least one research Chair in each Faculty as the strengths of the unit are identified and developed.

* * *

The establishment of the Heritage Foundation for Medical Research will have an enormous impact on medical research in Alberta and in the Faculty of Medicine at The University of Calgary. Similarly, with the growth in the amount of applied and contract research at the University, there is a danger that research in the basic sciences may be neglected, to the ultimate detriment of future applied research on which the continuing technological development of this Province will depend.

Recommendation IV.4.7

That the University press for a further Heritage Endowment for research in the non-medical basic sciences, including engineering, to ensure that the necessary groundwork for future applied research is not neglected.

The need for a planned program for the replacement of scientific equipment and for the continual upgrading of computer facilities are discussed elsewhere (see Chapter I, Recommendation 4, and Section 5 of this Chapter, respectively).

* * *

The development of intramural research teams is another means of increasing reseach activity, especially if their scholarship develops the bulk of their funding from external sources within a reasonable time, e.g. 5 - 7 years.

Recommendation IV.4.8

That the University promote group research to assure depth and continuity of research activities, and to attract external funding where it would otherwise not be available.

* * *

The potential impact of the development of research parks in Calgary, on the University, has already been discussed in Chapter I. The University should capitalize on this opportunity to enhance the quality of its graduates and to increase the number that will be available to meet the demands of the 1990's. The University should assume a position of vigorous leadership in establishing a vital University/industry interface.

Recommendation IV.4.9

That faculty members be encouraged to respond more to the needs of the community in applied and contract research, without sacrifice of their intellectual freedom or the neglect of basic research.

Recommendation IV.4.10

That the University explore major joint research programs of mutual benefit with industry and with organizations which will locate in the Research Park, in order to improve the academic/industrial linkage.

(This recommendation should be considered in the context of Recommendation IV.2.6).

* * *

The University currently has a patents policy and a policy with respect to the consulting activities of faculty members; however, these policies were developed during a period when there was relatively little activity in these areas and are now in need of review. The University should also explore alternative methods to facilitate the transfer of technology to industry, e.g. a company such as Unisearch at the University of New South Wales in Australia, or the Commercial and Industrial Development Corporation of Ottawa - Carleton.

> Recommendation IV.4.11
>
> *That the Vice-President (Research) conduct a review of the patents and consulting policies of the University, and explore alternative mechanisms to facilitate the transfer of technology to industry. Such a review should include consideration of the establishment of a research company to channel consulting and applied research, to obtain patents, and to market ideas and inventions.*

* * *

While new research fields must continually be opened up, there is a need at The University of Calgary to build on existing strengths, developing areas of real excellence, and of such prestige that in many disciplines they will attract major strategic and development grants from the Federal agencies. In addition, while the University may be fortunate in the flow of Provincial research funds, faculty members must remain highly competitive in the national awards programs. It must be noted that the quality of undergraduate teaching depends on the quality of faculty, and that high-quality faculty are to be found in association with high-quality research. In the interest of the continual development of a strong University, there is a need, therefore, as faculty leave or retire, to bring in new faculty who are strongly research oriented.

It must be emphasized that research and scholarly activity are the characteristic features of a university.

The rigorous application of the need for 'scholarship', as well as quality teaching performance to justify annual salary increments and promotions, should be used as a tool to increase the research effort of the University (see also Section 2 of this Chapter).

While it is recognized that individuals holding appointments as Instructors I or II, Senior Instructors, and Senior Demonstrators play a vital role in the teaching programs of large academic units and shoulder large teaching loads, their responsibilities do not normally include research and, therefore, the number of such appointments in a given unit relative to the number of professorial appointments with research expectations and commitments should be monitored carefully.

Recommendation IV.4.12

That research potential be a major factor in the appointment of new faculty members, without downgrading the importance of the ability to teach undergraduates.

Recommendation IV.4.13

That, in the development of research endeavours and Faculty standards, the University should concentrate primarily on building on existing strengths.

* * *

5. ACADEMIC SUPPORT

The Development Plan, 1976-1985, identifies a number of academic support units including the University Library, the Department of Communications Media, and the Department of Computer Services (now divided into Academic Computing Services and Administrative Computing Services). Inasmuch as the Department of Communications Media has recently undergone review by a Presidential Task Force (Jackson Committee) this section deals only with the University Library and Academic Computing Services.

University Library

The University of Calgary Library (now including some decentralization to the Medical Library, the Law Library and the Gallagher Library of Geology, and augmented by the holdings of the Arctic Institute of North America) has developed from a very small beginning to a major University Library in less than two decades. The University Library currently contains 1,010,000 bound volumes, 900,000 units of microform (microfilm, microfiche, microcard), 385,000 government publications and 330,000 maps and air-photos. Subscriptions are entered to 13,200 periodicals.

The mission of the Library is, as it has always been, to serve the information needs of the University community. The Library supports teaching, graduate education, research, patient care and community service. Each must be supported to the extent approved by the University. In almost any academic planning exercise, it must be recognized that there are library implications and it is essential that the library implications of all new courses and programs be considered in detail. New programs should be viewed as healthy growth and development and not malignancies feeding on those that were developed previously. While the current mechanism of library input to the planning process seems to be working, it should be made clear that the Library follows program development, it does not lead. Library collections must not become a lever to accelerate program developments prior to the demonstration of the need for a new program or the establishment of its academic merit.

The library implications of off-campus programs, particularly at the graduate level (see Section 7 of this Chapter) should be monitored carefully in the context of Recommendation IV.5.2 below. While there are a number of support options such as inter-library loan and book deposits, the quality of programs at either the undergraduate or the graduate level which lead to degrees for individuals who have had little or no exposure to the literature and information skills of their chosen field, is open to serious question.

If the investment in the Library is to be justified, every effort must be made in the coming years to exploit the value of this collection. Exploitation means widespread, competent use. Much effort must be directed to the creation of competent regular users at all levels of the University community. We will have succeeded only when the participation rate is 100% and every graduate of every University of Calgary program is competent in dealing with the information resources in his/her chosen field. The community service role of the Library deserves special mention. The University of Calgary is a major information resource for southern Alberta, and the current policy of providing public access to it where legitimate need can be demonstrated should be maintained and encouraged.

Recommendation IV.5.1

That the role of the University Library be affirmed to be the competent servicing of *the information and resource needs of the University community (teaching, graduate studies, research, patient care and community service.)*

Recommendation IV.5.2

That the continuing academic goal of the Library be to assure that all members of the University community are competent library users and that all graduates of the University are competent in dealing with the resources and information systems of their chosen fields.

Recommendation IV.5.3

That an essential part of all new course and program developments be the provision of adequate library support (materials and staff) and that this financial support be above and beyond ongoing support of existing programs.

* * *

In recent years, inflation and the declining value of the Canadian dollar have eroded the purchasing power of the Library book budget, but temporary relief has been obtained through the special Heritage Library Grants of $740,000 per annum which The University of Calgary received in 1979-80 and 1980-81. This had the effect of increasing the budget funds available for acquisitions by 48% in fiscal 1979-80 and by 41% in the current fiscal year. However, this special library development program as currently constituted will end in 1982, and The University of Calgary must plan now for the future of its Library beyond 1982.

It is the goal of the current acquisitions program of the Library to acquire the significant books and journals published during the current year from the University budget funds available in the current fiscal year. Heritage funds are being used almost exclusively for retrospective materials, including current material not acquired in recent years because of fiscal restraints. The current rate of acquisitions should be maintained if the University is to provide the type of leadership in the development of Alberta which can legitimately be expected of it.

Recommendation IV.5.4

That the collections goal of the Library be the maintenance of an acquisitions rate of at least 250,000 items and 15,000 subscriptions per year.

The University, independently and collectively through the Alberta Universities Coordinating Council, should impress on the Provincial Government the need for the continuation of the special Heritage Library Grants beyond 1982 in order to maintain the above acquisitions rate (see Chapter I, Recommendation 3).

* * *

The Library has made notable gains in its Special Collections in recent years and this thrust should be continued, but with a particular focus.

Recommendation IV.5.5

That the Library continue its collecting activities in the area of archives, but that these activities emphasize archives of Canadian creativity (authors, publishers, composers, dramatists, architects, designers and the like) and the archives of the University.

* * *

The computer is ubiquitous in the world of libraries. Planning and operations in the next few years will see developments leading to decentralizated on-line searching, on-line cataloguing, on-line circulation, on-line access to the public catalogue, and substantial inter-institutional and inter-provincial communication of library data.

This will lead not only to enhanced service, but to many efficiencies and the redeployment of resources. The question is not how, but when and how fast the Library can respond.

> Recommendation IV.5.6
>
> *That the Library continue development toward a decentralized on-line integrated acquisitions, cataloguing, circulation and searching system.*
>
> Recommendation IV.5.7
>
> *That the Library participate fully in inter-institutional and inter-provincial arrangements for Library cooperation, inter-library loan and information exchange.*

* * *

Academic Computing Services

Universities are in the midst of dramatic changes resulting from the ongoing revolution in information technology. Initially, computers were developed for very specialized uses in scientific, engineering and military technology, but they have infiltrated almost every aspect of our society. Institutions have been forced to make successive large capital investments in computing equipment, each change resulting in increased productivity and increased ease of access, with the creation of new demands for services far beyond those which were replaced. In the 1970's increasing numbers of undergraduate students learned to use computers as essential tools in their courses and their chosen professions.

The widespread use of computers in business and industry, at the cutting-edge of continuing technological advances, now requires that university graduates in a broad range of disciplines are taught computing techniques in the context of their discipline. Finally, the increasing power and versatility of micro- and mini-computers has introduced problems of centralization versus decentralization in institutions, the solution of which requires a coherent long-range policy.

The Department of Computer Services has recently been divided into Administrative Computer Services (transferred to Administrative Systems) and Academic Computer Services. Only the latter is dealt with in this section. With the appointment of a Vice-President (Research) in December, 1979, the responsibility for academic computing was transferred to that Office.

In the Summer of 1978, the University acted on a recommendation of the Computer Acquisitions Board, which had received the appropriate academic input, and made the decision to change the main University computer from the CDC 6400 System to the Honeywell Multics System. The new equipment was delivered in January, 1979, with an overlap period of about six months being allowed for the conversion from one machine to the other. In spite of this overlap period, the University faced the 1979-80 academic year with an essentially untried system serving inexperienced users, and with a dramatic shift from the 'batch' mode of operation to an interactive mode. The hardware was unreliable, there were many software deficiencies, and there was very little experience, on either the University or the Honeywell side, of operating this System in a large university environment. In spite of a memory upgrade early in the academic year 1979-80, it was a difficult period for instructors, researchers and students, which could only be managed with rigorous resource allocation and interim arrangements to do some computing jobs elsewhere. The growth of computing requirements in both instruction and in research, plus the latent demand for computing services which was realized through the switch to the attractive interactive computing mode, made it clear that The University of Calgary was not providing an academic support service with adequate capacity.

In the Spring of 1980 the University authorized the purchase of two stand-alone mini-computers, one in the Department of Computer Science and the other in the Department of Electrical Engineering. A major upgrade of the Honeywell Multics System took place in September, 1980, including an increase in memory by 2 megawords, two additional disk drives and an additional central processing unit.

The technological changes which brought interactive computing and powerful stand-alone mini- and micro-computers are continuing rapidly, as the legitimate demand for computing increases, and the University should develop a coordinated long-range academic computing policy as soon as possible which can accommodate technological changes as they occur.

Recommendation IV.5.8

That the Vice-President (Research), with the appropriate input from the GFC Computer Services Committee, formulate a well integrated and coordinated long-range plan for the University's academic computing system which takes into consideration the needs of instructors, researchers and students, as well as the computing requirements of institutes and the future occupants of the University Research Park.

* * *

The University of Calgary does not have an overall policy which deals with the use of computers in the preparation, revision and type-setting of manuscripts. The advantages of an "integrated text management system", a coordinated word processing service, and an electronic typesetting system which is driven by a computer are discussed in the recent Report of the Task Force on Scholarly Communication (1980). Such systems would have a great impact on the preparation of laboratory manuals and other instructional materials, committee reports, and manuscripts for publication, because of the ease with which manuscripts can be revised and edited, and transferred electronically to typesetting equipment, all based on a single keyboard entry process. The University of Calgary is now far behind a number of other universities in this regard. There is, furthermore, the danger that *ad hoc* decisions to purchase isolated word processors and associated equipment without an overall institutional policy for an integrated system will lead to incompatibility of equipment and inability to exploit these electronic techniques fully. The University Program Review Committee endorses in principle the recommendations of the Coward Committee.

Recommendation IV.5.9

That the University develop a policy with respect to an integrated institutional text management system, a central word processing service, and electronic typesetting which would ensure compatibility of equipment purchased, and which would fully exploit the cost-effectiveness of modern technology in this area.

* * *

6. PHYSICAL RESOURCES

Space

The University of Calgary campus is located on a 127 hectare site in northwest Calgary that is bounded on the east by the Crowchild Trail, on the south by 24th Avenue, N.W., on the west by educational reserve land and on the north by 32nd Avenue, N.W. In addition to the main campus, the University has facilities for the Faculty of Medicine on the Foothills Hospital site, facilities to accommodate 150 Social Welfare students in Edmonton, an environmental research station in the Kananaskis area, an astronomical observatory facility at Priddis, a centre for research and development in masonry in north-east Calgary, an animal care facility on the northwestern outskirts of Calgary, and participates in the consortium of universities which operates the Bamfield Marine Biological Research Station on Vancouver Island.

In the years prior to and immediately after its establishment as an independent degree-granting institution in 1966, The University of Calgary went through a period of rapid development of facilities to accommodate an increasing enrolment which at that time was expected to reach about eighteen thousand by 1980. The funding for this development was provided directly by Government and by funds raised privately and matched by Government through the Three Alberta Universities Fund. When enrolment levelled off at about eleven thousand in the mid 1970's, and a freeze on new buildings was imposed, construction of facilities was curtailed abruptly and the planned building program for the University was left incomplete. As a result, some undesirable compromises in providing space for a number of academic units have been necessary, and housing, recreational and other facilities for students have not been developed to the extent common at other universities.

A number of mechanisms have been developed to assist the University to cope with space planning and space management during this difficult period. The Space Allocation Committee, composed of members of all academic units of the University, and reporting to the Vice-President (Services), has established a space planning formula that is used as a basis for developing requests for space. Adjustments to the formula are made periodically by the Committee. This formula is a relatively objective means of determining need for space throughout the University. The space that a Faculty requires is determined by consideration of factors such as laboratory use by students, the number of academic and support staff, and the nature of research undertaken by its graduate students and its postdoctoral fellows. Most classrooms are not controlled by Faculties, but are part of the University's inventory and are assigned through the Registrar's Office. Within the guidelines already established, policy on space receives approval from the Policy and Planning Committee, General Faculties Council and ultimately, the Board of Governors.

The implementation of policy decisions on space is the responsibility of the Vice-President (Services). In 1979 the President established the Space Management Advisory Committee, chaired by the Vice-President (Services), to advise on difficult practical decisions required to make the best use of existing space. The membership of the Space Management Advisory Committee is drawn from the academic ranks of the University to ensure that there is adequate opportunity to consider the views of those most likely to be affected by its decisions.

If funds for new buildings were to be allocated now, new space would not become available for several years. As a result, utilization of existing space will remain a sensitive matter for some time and space management should receive even more attention than it already does. As noted above, the Space Allocation Committee and the Space Management Advisory Committee are in place and provide a general framework for space planning and management. Attention should therefore be directed to improving the mechanisms for implementing policy decisions dealing with space. Since extensive consultation regarding space is important, it is necessary to ensure that adequate resources are available for this function. The evolution of the Office of the Vice-President (Services) has led to a number of reporting anomalies that tend to detract from the time available to the Vice-President (Services) to deal with space planning and management. Some administrative reorganization and perhaps some increase in staff may be necessary to redress this undesirable situation.

Recommendation IV.6.1

That a review of the administrative structure in the Office of the Vice-President (Services) be conducted by the President with a view to making such changes as are necessary to permit the Office to place more emphasis on space planning than is now possible. In this review, special emphasis should be placed on the importance of providing ample opportunity for extensive consultation with the units concerned when space reallocation appears to be necessary.

* * *

Although the University is attempting to make good use of less than adequate space, it should be recognized that development of excellence in undergraduate and graduate programs is being hindered in many cases by the lack of suitable facilities. A number of specific references to such situations are to be found in sections of this Report dealing with academic and support units. The recent start on the "space shuffle" plan will provide some short-term alleviation but several of these situations are serious enough to warrant reiteration here. The Faculty of Fine Arts has been handicapped for a long time because it occupies space that is less than ideal in several widely-scattered locations on campus. The Faculty of Humanities, too, is widely dispersed and needs to be consolidated. Facilities in the Faculty of Physical Education are inadequate and the development of programs is being hindered by this circumstance. The expanding Geophysics program in the Faculty of Science has urgent space needs. Development of programs in Engineering, particularly in the Department of Chemical and Petroleum Engineering, also is being hampered by lack of suitable space. University College requires improved accommodation to deal more effectively with the large number of students enrolled. These are but a few examples to support the contention that a substantial building and renovations program at The University of Calgary is necessary for the continuing development of our academic programs.

In addition to the needs mentioned above, space is required to allow the University to participate fully in the unprecedented expansion of Alberta's research effort in a number of areas. The Alberta Heritage Foundation for Medical Research will create research opportunities in the Faculty of Medicine and in a number of other units within the University. The magnitude of this undertaking is such that it will have serious space implications which will have to be addressed in the near future. The buoyant oil and gas industry in Alberta has contributed to an increase in contract research in the Faculties of Science and Engineering. The implementation of the NSERC five-year plan to rapidly increase the Canadian scientific and technological manpower supply so that a larger percentage of our GNP can be directed toward research and development, also has serious space implications for science and engineering.

Further expansion of these activities can, in some instances, only occur if adequate space can be made available. Some of the research requirements of the oil and gas industry will be met by the development of the University Research Park adjacent to the campus. The influx of hundreds of professional, technical and support staff that will be associated with the laboratories in the park will place further demands on University library facilities, laboratory facilities and certainly on service and recreational facilities. The University must plan to respond to these additional demands in order to develop the university-industrial interaction that is one objective of the University Research Park.

Many of the opportunities in research have arisen only in the last few years and were, for the most part, difficult to foresee in the early and mid-seventies. A comprehensive plan for the University with respect to the adjacent research park and educational reserve lands has not, therefore, been fully developed. This matter should be addressed as quickly as possible.

Recommendation IV.6.2

> *That the University, in consultation with the City of Calgary and provincial authorities, produce a long-range plan for the development of the University Research Park and educational reserve land. When this plan has been formulated, the University should review existing priorities for new buildings to take into account current circumstances and then proceed with strong representation to Government for the continuation of our construction program.*

* * *

Equipment and Furnishings

The funds allocated to the University by the Department of Advanced Education and Manpower for capital equipment and furnishings are divided into a furnishings budget and an equipment budget, and then distributed to academic and support units on the recommendation of the University Budget Committee. In the period of rapid growth from the mid-sixties to the mid-seventies, no distinction was made between funding for new items and funding for replacement items. In 1975, a scheme to set aside a portion of the funds provided for capital equipment and another for furnishings for replacement items was instituted, and distribution of these funds to budget units within the University was made on the basis of the value of the inventory under the control of the budget units. Provision to accumulate replacement funds in order to allow for the replacement of large items in a single year was incorporated into the scheme. The allocation of funds into new and replacement line items by the Budget Committee has been about 50%-50% for the furnishings budget and about 40%-60% for the equipment budget.

Although the University Budget Committee's allocation scheme for capital funds is functioning reasonably well, there is some dissatisfaction with such matters as adequacy of communication between the University Budget Committee and the budget units, adequacy of administrative input into the budget process beyond the Faculty level, distribution of funds between the new and replacement categories, and the timing of the capital budget process. In addition, Faculties and other budget units have developed internal procedures for dealing with capital equipment budgets that are, in some cases, not considered to be entirely satisfactory. Since many teaching and research programs are dependent on equipment, every effort should be made to ensure that capital equipment funds are used as effectively as possible.

Recommendation IV.6.3

That the University review the procedures that have been developed for the

> *distribution of capital funds to budget units and within the budget units, with a view to making such changes as are necessary to permit a better informed, more carefully considered and less hurried preparation of the capital budget.*

* * *

There is also concern about the general level of funding for equipment. The total equipment budget for the last few years has been about $3-million per annum and of this, about $2-million has been used for replacement of equipment. The total equipment inventory at the University is valued at $36-million and the replacement rate has therefore been about 5.5%. In Science, Engineering and Medicine, such a replacement rate is far too low, particularly if it is noted that the inventory is based on a dollar value at time of purchase, while the replacement funds are in terms of dollars that today have a considerably lower purchasing power. The University should try to obtain acceptance of a replacement rate of the order of 10% of inventory, and a new capital equipment budget of the order of 3% of inventory to prevent a serious deterioration of its equipment inventory and a corresponding decline in the quality of undergraduate, postgraduate and research programs especially in equipment-dependent disciplines. (See also Chapter I, Recommendation 4).

Recommendation IV.6.4

> *That the University strive to obtain Government acceptance of an annual capital equipment budget of the order of 12-15% of inventory in order to maintain the equipment inventory in the condition required to support undergraduate, postgraduate and research programs.*

* * *

7. OFF-CAMPUS INITIATIVES

Outreach

The Universities Act establishes that it is "a duty and function of each university to contribute to the educational and cultural advancement of the people of Alberta at large." At The University of Calgary, this mandate is carried out in several diverse ways in the hope that at least three groups will benefit from the programs, services and facilities of this institution. The groups most likely to avail themselves of the University's attempts to reach out to the community at large are: 1) professionals wishing to keep abreast of the latest developments in their fields; 2) individuals who seek "life-enrichment" educational experiences that can be provided through both credit and non-credit offerings; 3) those who aspire towards a degree in a chosen field but who, because of their work, can take courses only at times and places suitable for them. The fact that these groups may overlap to some extent challenges the University's flexibility, not to mention its resources.

The Faculty of Continuing Education has the mandate for extending the University's services to individuals off campus (see Chapter III,Section 2). Through that Faculty, courses are offered in numerous locations in Calgary as well as in such locations as Olds, Lethbridge, Edmonton, Grande Prairie and St. Paul. Non-credit courses are offered on and off campus both for professionals interested in upgrading and for local citizens interested in continuing their education in an informal way.

In addition to the courses offered by Continuing Education, usually with the involvement of a disciplinary Faculty, initiatives to broaden the University's commitment to the people of Alberta at large have been sponsored by other academic units. The Faculty of Social Welfare, with a mandate for Social Welfare education in the Province, provides substantial programming in Edmonton and other locations throughout Alberta. The Faculty of Medicine offers non-credit professional education in southern Alberta. The Faculties of Graduate Studies and Education have implemented an M.Ed. degree program in Medicine Hat to serve the needs of teachers in that region. In these and other ways the University strives to make its resources available to those people in the Province for whom association with a university at its normal site is virtually impossible.

In 1972 The University of Calgary established a special service to assist native students (many of them non-matriculated) in entering the University and to provide them with special tutoring and counselling to enable them to complete regular degree programs. Native Student Services, formerly called Indian Students' University Program Services, now usually provides these services to about 50 students on campus in any given year. A large part of the costs are recovered through contractual arrangements with the Department of Indian Affairs and Northern Development. Through liaison work with native groups and band councils, some University programs have been extended to a number of outreach locations (Grouard, Hobbema, Morley). It is particularly important to provide opportunities for students to commence university studies on reserves, with subsequent work done on the campus to complete regular degree programs. The success of this program must be measured by the number of native graduates from The University of Calgary (28 status and 5 non-status from 1976-1980, compared with a total of 5 before 1976), and by their employment and professional contributions, frequently to native organizations and communities. Of the 38 graduates from this University, 25 completed a B.Ed., 7 a B.S.W., 3 a B.A., and one each an M.F.A., an M.Ed. and an M.D.

While the courses offered off-campus with the particular interests of native students in mind are courses already approved by the University, collections of such courses which could be viewed as *de facto* programs, can have wider program and long-term resource implications, and in some instances involve other institutions as well, e.g. Athabasca University. These initiatives should be given more visibility in the University and be presented to GFC for information and approval as may be appropriate.

Recommendation IV.7.1

That the Faculty of Continuing Education present to GFC for approval any future proposals to extend collections of credit courses, where these have wider program and possible long-term resource implications.

* * *

In 1978 GFC and the Board of Governors, acting on recommendations arising out of the Report Proposals for Increased Response to the Expectations of the Native Peoples of Alberta, approved in principle the establishment of a University Native Centre, subject to the provision of special funds from external sources. This Centre would expand studies about our indigenous culture and, through Native Student Services, provide increased assistance to native students. So far the University has been unsucessful in attempts to obtain long-term funding to permit the establishment of this Centre.

Recommendation IV.7.2

That the University review the decisions made in 1978 with respect to the establishment of a University Native Centre, and assign a higher priority to its establishment, with an accompanying allocation of University budget funds.

* * *

While our record shows an increased understanding of the problems attached to full-time attendance on campus, it is likely that the next decade will provide increased opportunities for the University to extend its services still further. The buoyant economy of the Province means that professionals in areas such as management, economics, computing science and engineering will look to the University as a place to acquire new skills, knowledge and techniques. A combination of work and study may best meet the aspirations of these people as well as those who want not only upgrading, but a complete university degree. If the participation of young Albertans in higher education is to improve, the University will have to develop a coordinated sequence of offerings given at irregular times and in various locations. The recent approval of the category of unclassified students (those who, without regular admission credentials, will be allowed to register in a limited number of courses) may ease University entrance for some deserving students. The attempt to create a three-year rolling plan for scheduling course offerings during evenings and Spring/ Summer session may, if it is successful, make a coherent sequence of courses more attractive to those who are employed and who are able to take courses on campus. But clearly many other ways of coordinating the University's efforts to reach people who would benefit from exposure to its offerings remain essentially unexplored, and if we are to seize the opportunities that seem to be available to us now, we should consider carefully other methods of reaching out to the community.

One of the mechanisms for taking the University to the community is to establish what has been called a "downtown presence". There is little reason to think that the current practice of using donated and short-term space scattered throughout the City does this effectively. Without a central location for their activities, students and faculty may be deprived of important pedagogical aids such as audio-visual equipment and library resources. Potential students may not realize that offerings are available close at hand to their places of work or residence. The public may not recognize sufficiently the University's presence in the high density community in the core of the City. On the other hand, moving more of its activities downtown prematurely is a mistake the University must avoid.

In light of the complexity of the task ahead, it is essential that a thorough analysis of the implications of increased downtown or out-of-town offerings be undertaken.

> Recommendation IV.7.3
>
> *That the Office of the Vice-President (Academic), assisted by the Office of Institutional Research, carry out a survey and assessment to determine the various educational requirements of those groups for whom full-time or part-time participation in the activities held on the campus is difficult or impossible, and decide which needs can and should be met, in what order, at what costs (financial and otherwise) and how best to implement the delivery of educational services.*

* * *

Practical and Clinical Experience

A second, more focused, form of outreach to and interaction with the community involves those Faculties which incorporate practical or clinical experience into their degree programs. Prospective teachers take practicum courses so that they can be introduced to real classroom situations before entering the profession; prospective nurses work part-time in clinical settings; students in Environmental Design, Law, Medicine, Social Welfare and other units similarly engage in real rather than stimulated activities better to prepare them for the vocations they will be pursuing after graduation. Clearly, this form of work-study program has advantages both for the students and the external agencies with which they come into contact. Students are encouraged to integrate theory and practice; the host agencies recognize that the University is no "ivory tower" but a willing participant in the attempt to deal with day-to-day social, legal and medical problems. Furthermore, prospective employers have an opportunity to gauge the abilities of prospective employees.

Despite these advantages, the University's desire to provide clinical and practical experience for many of its students sometimes gives rise to frustrations among faculty members responsible for placing students in appropriate settings. Some agencies likewise find it difficult to respond to the requests they receive from various segments of the University. Among the factors that cause problems in this regard is the difficulty of matching students' schedules with external schedules. The period from September through April may not, for instance, be the ideal time for an agency that deals with run-away adolescents to welcome students from the Faculty of Social Welfare. A Nursing student required to take courses outside of that Faculty may find working two days a week downtown ruins the chance of taking the course in gerontology offered by the Psychology Department. The complexity of the time-consuming activities associated with the University's administration of practical experience for students makes it impractical to coordinate these activities through a central office for all Faculties. None the less, it is appropriate to acknowledge the University's commitment to practical experience for many student programs. Such institutional commitment requires that the central timetable permit efficient coordination of work-study programs. (See Section 1 of this Chapter).

Recommendation IV.7.4

That the University Budget Committee be urged to recognize that there is a valid need in many Faculties for practical and clinical experience for students and, further, to note the complexity and time-consuming nature of the work involved in providing opportunities for this experience.

* * *

Co-operative Education

Co-operative education, which has been developed at a number of post-secondary institutions, allows for a combination of on-campus study with regular, relatively long, periods of employment. The most notable example of this program in Canada is the engineering program at the University of Waterloo. These programs need not apply only to professional areas: the Universities of Lethbridge and Victoria have begun limited programs for "arts and science" students. Two factors must be borne in mind: one is that they are expensive to run; the other is that institutions may have trouble placing their students in suitable vocational contexts. The applicability of such programs to the prosperous "marketplace" of southern Alberta is, none the less, in need of further study. Many students, and there is no reason to restrict the concept to undergraduates, might find a combination of work and study an extremely attractive educational/financial option.

Recommendation IV.7.5

That the Office of the Vice-President (Academic) undertake a study to determine the advantages and disadvantages of cooperative education for appropriate undergraduate and graduate programs at The University of Calgary.

* * *

CHAPTER V

A DECADE FOR DEVELOPMENT OF EXCELLENCE

Elsewhere in this Report we have attempted to explicate two classes of problems and have recommended policies and procedures as possible solutions to those problems. The first class of recommendations concerns the relatively specific problems of individual Faculties. The second concerns relatively specific problems that are common to a number of administrative units, such as faculty work loads, timetabling of courses, the role of Department Heads, and so on.

In this section we attempt to identify a few very broad areas of institution-wide concern and to suggest possible policy positions that might help to deal with these concerns over the coming decade. Two assumptions underlie our discussion. First, that for better or for worse, the University is what we make it to be. In any organization as large and heterogenous as this institution a small number of individuals must constantly be involved in planning, not simply planning for growth but planning for development. The philosopher, John Herman Randall, Jr., writing of the difference in approach between the nineteenth and the twentieth centuries, commented:

> Whatever kind of progress we still hope for today we regard not as the gift of God or evolution, but as the responsibility of human intelligence and planning. We have far less confidence than our fathers that the results of what we do will be good; but we are far more convinced that whatever is done we shall have to do ourselves.
>
> (J.H. Randall, Jr., The Making of the Modern Mind [Rev. ed.] New York: Columbia University Press, 1976, pp. 394-395)

We view it as part of our responsibility to our students and our society today, as well as the students and the society of the next century, to attempt intelligent, rational planning even though our wisdom and our vision may be limited.

Second, it seems to us to be self-evident that no university can hope to be all things to all people. Society's expectations are often not clear and occasionally contradictory. Our students come to us with a diversity of backgrounds and interests and a multiplicity of goals. Not only can we not hope to do all things, we probably cannot realistically hope to do most things. But we can certainly, with rational planning, hope to do some things and to do them well. With planning, we will decide what we can do. Without planning, the vagaries of public opinion and political expediency will decide for us.

* * *

Planning for Development - An Ongoing Process

In any institution the size and complexity of The University of Calgary, a number of interrelated but distinguishable activities are always going on. They include policy making, planning, implementation and evaluation. Much of university administration is reactive, dealing with individual problems as they arise. To some extent this will always be the case with an institution that has so little real control over two of the fundamental factors of its existence. These are the size of its operating budget and the size, and mix, of its student population. Nevertheless, we believe that medium range planning (five to ten years at a time) is possible and desirable. Even in a state of equilibrium or minimal growth, development must still continue.

Although the process of development is a complicated one and includes a number of factors not under the direct control of the university, certain characteristics of the process should be seen as goals to be approached, if not achieved. While the primary focus of development should be on academic matters such as curricula, introducing and eliminating programs, expanding and contracting research facilities, and so on, financial, physical and human constraints have to be recognized and integrated into the policy making and planning processes.

Some constancy of purpose must be achieved, but not a rigidity of purpose. This is always a delicate balance, but a necessary one. Fluctuating policy is probably worse than no discernable policy at all since it not only breeds insecurity but also confusion and contempt for the whole policy/planning process. It should be recognized that this process is just that, a process, a dynamic, changing activity. A plan is a part of the process, but no substitute for it. In the very act of drawing up a plan, such as the document at hand, a process of policy making, planning, evaluation and implementation has been taking place. A number of our recommendations will be obsolete by the time they are printed. This is of the nature of the exercise and cannot be eliminated entirely, nor should it be. However, a development process that is so cumbersome that a five year plan takes four years and six months to receive internal University approval may not only be of questionable value, but may also generate skepticism concerning the whole process.

Thus, some degree of efficiency must be designed into the process itself without eliminating entirely a reasonable amount of input from the University community. This last point is particularly important since, in the long run, it is individuals within the institution and its constituent units who will decide the success or failure of any policy or any plan, and there is little point in a development process that does not take individual views into consideration. To achieve this end it is necessary that the development process be intelligible and widely communicated so that some sympathetic appreciation of problems and procedures can be achieved, particularly where complete agreement cannot, while uncertainty and 'surprises' are minimized. One of the procedural points which should be understood is the relationship between the planning process and the day-to-day administrative decision making process. As much as possible, it should always be clear not only what the policies and plans are, but who will be expected to carry them out and what implications they may have for the administrative activity of the institution. Finally, it should be stressed again that development is always an on-going process with reviews and evaluations, revisions and altered priorities to be expected. The problem is to deal with desirable and necessary changes effectively, not build a structure that cannot change.

As an example of the need for policies and planning that will help to integrate what might otherwise become disparate elements of the institution, we would call attention to scientific, engineering and medical research. Different sources of financing and different management problems are involved. First, the funds, largely but not solely Federal, awarded to the University in response to faculty research proposals, have begun to increase markedly and will commit larger proportions of the time of faculty members to research as well as increase demands on space and facilities. Second, large scale provincial funding of particular types of research efforts, such as the Alberta Heritage Foundation for Medical Research, a program funded by the income on a 300 million dollar endowment, will have obvious effects on institutional priorities. Third, the continued development of privately funded research is expected to increase dramatically to the point where the

University Research Park adjacent to the University will be completely filled within the next few years and will bring significant numbers of professionals, perhaps as many as one thousand, (researchers, technicians, administrators, etc.) into close spatial and intellectual contiguity with the University. While increased research funding is clearly to be welcomed, such funding will necessitate increased planning of a much broader range of circumstances. A few moments of reflection will call to mind a number of potential problems, e.g. space for laboratories and offices, a shortage of trained technicians and support staff, joint appointments involving the staff of industrial research facilities within the research park, increased competition from private research firms in the hiring of competent scientists and engineers, increased contract research, the growth of research institutes on and near the campus. To repeat a point already made, unless we plan ahead and have some clear policies for addressing these problems and integrating the research programs into the academic programs of the University, the inevitable result will be a distortion of the University's development.

We need not fear these developments nor attempt to oppose them. Indeed, they are exciting and we can benefit greatly from them if we plan their integration and management with care and foresight. The University has already taken the important first step of creating the position of Vice-President (Research). But we believe it to be even more important that planning in this, as in other areas, involve effective input from knowledgeable academics as well as the necessary interface between University administrators and their counterparts in government and private industry. Moreover, the development of the research park provides perhaps the clearest example of the necessity for efficient planning. Private industry allegedly has a capacity for reaching and implementing decisions more rapidly than can the University, dependent as we are in many areas on approval within our institution and cooperation of the Provincial Government. If our priorities are not to become, by default, simply the priorities of different levels of government and of private industry, we must become more active and efficient partners in the whole process of planning. Realistically, there is no way of avoiding these external forces, nor is it clear that we should make any attempt to avoid them. It is, however, very clear to us that the University should make every effort to direct these forces in ways that will bring the greatest benefits to our students and our academic programs.

In addition to the development of the University Research Park and the need for dealing quickly and consistently with the plans of private industry, there are also a whole series of opportunities involving various levels of government which must be addressed and assimilated into the development of the University. These include community recreational facilities and programs, health care facilities, the 1988 Olympic Games proposal, light rail transit facilities, and a host of problems that are an unavoidable part of existence in a growing city and province.

Recommendation V.1

That the University establish a permanent Institutional Policy and Priorities Committee comprised of the President, the Vice-Presidents and four experienced members of the full-time academic staff, to meet regularly -- perhaps weekly -- to evaluate current institutional policies and priorities and to recommend developments in policies and priorities covering five to ten year periods in the future. The four faculty members should be appointed by the President after consultation with the Deans' Council. Terms of appointment should be four years (renewable), two positions becoming vacant every two years.

It will be argued that a Policy and Planning Committee already exists. In our view this Committee is simply too large to carry out its original mandate effectively. Specifically, the original terms of reference for PPC included the following:

> The Policy and Planning Committee is specifically responsible for developing recommendations on overall priorities within the University and for recommending to General Faculties Council policies respecting the development of institutional goals and plans. The Committee is responsible for developing the policy framework within which academic goals may be defined, priorities may be determined, alternative planning proposals may be assessed, and the derivative concrete plans developed. By means of continuous review it should maintain projections of policy for a rolling five-year period.

PPC has done substantial work in establishing broad policy frameworks for planning. Towards the end of the life of the 1972-76 Academic Plan, the Committee produced The University of Calgary Development Plan 1976-1985, which provided the context for the formulation of detailed five-year plans for each Faculty and Support Unit. PPC completed the review of the detailed plans in the Summer of 1978, and has used the planning documents from time to time as benchmark information in reacting to proposals put forward by individual Faculties. However, in our view PPC, because of attempts to make it widely representative, is too large to deal effectively with priority determination and continuous review, as part of an ongoing planning process. This fact has left a real gap in initiative, as opposed to reactive, planning at the University level.

Recommendation V.2

That the name of the "Policy and Planning Committee" be changed to "Program Assessment Committee" and that its terms of reference be rewritten to reflect its

> *actual function as a committee that assesses planning proposals initiated within various units of the University, prior to action being taken by GFC.*

* * *

Building on Strength - A Strategy for the Eighties

It is a commonplace that universities constantly pursue excellence and a pity that they seldom overtake it. Perhaps that is because a university tends to be a schizophrenic institution. It is a mind divided within itself. On the one hand, it works to uncover and preserve the culture to which it owes its origins and passes that culture on to its students with a reverence which occasionally borders on idolatry. On the other hand, it places that culture within historical and intellectual perspectives that point up both the values of the culture and the relative nature of those values as new knowledge is sought and as both new and old questions are asked and asked again. This constant questioning of old beliefs can lead to the impression, outside the institution, of a series of savage attacks on accepted values. The schizophrenia is compounded by the expectations, real or imagined, of the society of which the university is certainly a part, occasionally a leader, sometimes a tool. Society undoubtedly pays the piper but it hardly speaks with one clear and unambiguous voice in calling the tune. Moreover, the piper on occasion must question society's taste in music.

There are constant compromises, for example, that must be made in obtaining a reasonable balance between specialized professional training and liberal education. A university without a sense of direction, without a sense of values, without a sense of the culture from which it has come and to which it is moving, is at the mercy of every social fad, every political whim, every intellectual charlatan. More importantly, its students are similarly vulnerable. It is important for a university to attempt to look at itself with realistic eyes, to evaluate its strengths and its weaknesses, to decide in which direction it hopes to move in the future and where it intends to draw lines and say, "this far and no farther".

To avoid debating the usual platitudes, let us agree from the start that we prefer 'excellence' to 'mediocrity', 'flexibility' to 'rigidity', 'strength' to 'weakness' and 'sensitivity' to 'obdurateness'. Let us also agree that a schizophrenic institution probably will never agree completely on what those terms mean. What may be more to the point is an assessment of where we are at present. It is probably fair to say that The University of Calgary is an institution that displays a good deal more quality than one might reasonably expect from a new and rapidly developed University in a western Canadian province with a population of some two-million people. It is also a University that still has a long way to go in many areas before the term 'excellence' can seriously be applied. The excellence of a post-secondary educational institution is, in the end, a matter of its people -- students, faculty and staff -- and the excellence of its research facilities. Thus, the basis of excellence lies in the day-to-day establishment and administration of scholarship programs, recruitment procedures, library acquisitions, capital funds for laboratory apparatus and a commitment to serious scholarship. We have been fortunate in being part of a society that has had both wealth and the good sense to see that education and research are sound investments for the future. We have been unfortunate in not having quite achieved the status of a mature university at the time that society began to have second thoughts about its investment.

The primary role of a university is teaching, that point is not being questioned here. But a close secondary role, so close in fact that the two go hand in hand, is research. Extending knowledge while it is being taught, teaching how to extend knowledge -- these are the unique functions of universities. What constitutes knowledge, how it is best extended and how it is best taught are matters on which opinions have differed as the priorities and values of various societies have changed. But that the youth should be taught, that new knowledge should be acquired, these are points on which all civilized societies have agreed. The functions of a healthy university are those of expounding and inquiring, not the one in isolation from the other but both in a reciprocal relationship.

While different disciplines within The University of Calgary have developed at different rates, an overall problem is that a breadth of teaching has developed without a corresponding depth of research. Within the professional lives and recent memory of many individuals currently on the staff of this University, academic departments began literally from nothing; physical facilities were planned and constructed, libraries and laboratories were acquired. The first priority was to offer a breadth of programs with facilities appropriate to the teaching function. The institution was pressed, for years, to find competent faculty members who could offer the courses required by the developing programs. It was only occasionally that both sufficient funds and sufficient demand made it possible to attract individuals with similar interests and training so that depth, as well as breadth, could be developed. As the rapid growth of the sixties subsided, financial support subsided with it. For a more mature institution that had been able to build depth on its existing base during the years of generous support, the restraints were less pernicious. For a younger institution such as The University of Calgary that had barely achieved an adequate teaching staff and relatively little research depth, the restraints were nearly disastrous.

The results, in their most basic terms, meant that whole areas within disciplines were being carried on the expertise of one or two individuals with little chance for research groups to form, little opportunity on a day-to-day basis for the exchange of ideas with colleagues who were sufficiently knowledgeable on a particular research topic, little opportunity to justify expenditures for research apparatus to be used by a number of individuals working on similar problems, little back-up in the teaching function to allow for extended periods of research. In short, a kind of arrested development occurred at a critical point in the growth of The University of Calgary which has kept the institution from functioning, in many areas, as a mature University. This has had an effect not only on our research but on our teaching as well. It is a rare individual who can continue, over a period of years, to expound well with inadequate time or opportunity for inquiry.

To expand briefly on one of these points, it has long been recognized both by scientists and by individuals interested in the social and psychological variables that play a role in scientific productivity, that having a knowledgeable colleague to talk to can be an indispensable factor in scientific creativity. In a recent history of the development of the field of molecular biology, the author describes the office, and the working style, of Francis Crick, Nobel prize winner and co-discoverer, with James Watson, of the helical structure of DNA.

> Crick shared the office with Sydney Brenner and a blackboard so that he could always have somebody to talk to. A lane in front of the blackboard between the window wall

> and Brenner's desk was kept clear, and there Crick, when thinking aloud, paced up and down with a loping, long-legged stride that kept time with the rhythms of his speech. I remarked once that some scientists, with Niels Bohr as the greatest example, seemed able to work only by talking, questioning, arguing.
>
> (Horace Freeland Judson, The Eighth Day of Creation, Makers of the Revolution in Biology, New York: Simon & Schuster, 1979, p.202)

Many scientists and historians of science have commented that it is highly unlikely that either Watson or Crick could have decoded the DNA molecule working alone, and that one of the reasons why other scientists working on the same problem had not been successful was the lack of an effective collaborator. Individuals who have never engaged in this type of creative activity are not likely to appreciate the important nature of this kind of collaboration.

The general problem has been exacerbated by an apparent belief on the part of many academic units within the University that their only real chance for expansion in size lay with an expansion in the breadth of their programs, an opening up of new areas of teaching and research. If this ever was, in fact, policy within the institution then we question whether, during the next decade, this policy should be continued.

Recommendation V.3

That The University of Calgary adopt a general policy, and make that policy known to its various academic units, that priority in the reallocation of internal resources will be given to the development of depth in areas of existing strength rather than to expansion into widely diverse new areas of specialization.

* * *

As with most things in life, the policy is not nearly as important as its sensible administration. Taken too rigidly, it would cut us off from any new programs, any new research, any new ideas. That would clearly be a cure worse than the disease. As the world changes, universities must be prepared to accommodate a reasonable amount of that change. The problem is one of differentiating fads from fundamentals. Stagnation must not be allowed, nor is it, we believe, likely to occur. The funding policies of the provincial government encourage new programs in areas where the need and value of those programs can be demonstrated. What we are advocating is that with an effective procedure for internal reallocation of resources now in place, the University itself should direct its own existing resources to the task of building on strength and doing so consistently. A University-wide policy of encouraging the academic units to achieve depth in existing specializations before further expansion occurs would extend the scope of recommendations such as those made recently by the Presidential Task Force which reviewed the Faculty of Management.

This may be neither an easy nor a popular move. The first thing it will require is that academic units identify and document the cases for those areas in which excellence or its clear potential already exists. Decisions, probably difficult decisions, will then have to be made concerning priorities for the reallocation of resources among these areas. The portion of this Report which deals with the various Faculties has taken a first step in this direction. Inevitably problems will arise. First, it is always easier to identify a new area into which one might expand and to generate at least temporary enthusiasm for such expansion than it is to document the fact that one already has strength in some area of specialization and that there would be benefits from increasing that existing strength. Second, embarrassing questions will arise in some academic units concerning their performance over the past ten or fifteen years. Such questions have already begun to be asked in the Faculty evaluations and in portions of this document. Third, newer academic units will feel that their aspirations for expansion, many of them legitimate, have been undermined. Again, sensible administration of such a policy, combined with the Provincial Government's apparent willingness to consider the funding of new programs, will be necessary to alleviate the more serious of these objections.

As an example of how a policy of building on existing strength might be implemented administratively, one might look at the hiring of new staff when positions become vacant. Reallocation from one unit to another is now in evidence. But, in addition, a judicious balance of young, fresh talent and older proven ability recruited from the staffs of other institutions will have to be achieved. Research teams often depend upon mature leadership as well as on young enthusiasm, and the proven superstar as well as the brilliant nova, must be pursued. In this regard, the University should not look on the acquisition of senior funded Chairs simply as a way of opening up new areas but, more importantly, as a way of bringing to national and international prominence existing strengths.

* * *

Building for Innovation - The Path to the Twenty-First Century

Having argued for a policy of internal reallocation to build on strength, we now wish to overturn the coin to its reverse side. Any university that stops innovating will stagnate. Any university that allows significant numbers of its staff, or whole academic units, to opt out of the general educational process, runs a serious risk of losing sight of its original mandate from society. Moreover, the quality of any university is still judged, to a large extent, by the quality of its general undergraduate education. When people speak of a university, as distinguished from its individual schools and Faculties, as being weak or strong, it is usually the general undergraduate program which they have in mind.

This being the case, as important as the professional Faculties, graduate programs, research institutes and the like are to the institution as a whole and especially to its reputation, it would be impractical and shortsighted to ignore the quality of the institution's general undergraduate degree programs and the broadly based undergraduate curriculum. Recently institutions such as the University of Toronto and Harvard University have taken the time to study their undergraduate programs and to recommend changes, both major and minor. For many individuals within universities, the undergraduate curriculum is an uninteresting and mundane matter best dealt with briefly, if at all, and then left to sort itself out. Despite a number of years of "viewing with alarm" and "re-establishing priorities", it still appears to be the case that in the minds of many faculty members academic prestige is inversely related to the amount of undergraduate teaching one does. The ultimate accolade in our post-secondary educational institutions remains the appointment to a position, either in research or administration, which removes the happy recipient as far as possible from any direct contact with the educational process. Nevertheless, we must realize always that different individuals serve institutions best in different ways.

Recommendation V.4

That the University not lose sight of its fundamental commitment to high quality, general undergraduate education and that the institution's curricula, its system of rewards and its fiscal policies continue to reflect this commitment.

* * *

An important and necessary component of this commitment is a continuation of the process of evaluation of the academic teaching units within the institution and an efficient and trusted method for ensuring that necessary changes arising from these evaluations are, in fact, carried out.

Historically, the liberal arts college has stood as the modern model of general undergraduate education and this model has been associated particularly with advanced education in the Northeastern United States. However, since both the United States and English-speaking Canada patterned their earliest post-secondary educational institutions on English and Scottish universities, it is not surprising to find some similar emphases in early Canadian universities, along with professional training. Robin Harris, writing on the history of Canadian higher education, has argued that the purpose of the first Canadian universities was, ". . . the training of clergy and the general education of the future leaders of society" and he noted that ". . . one way or another, theology invariably presupposed arts." (Robin S. Harris, A History of Higher Education in Canada 1663-1960 Toronto: University of Toronto, 1976, p.27). In discussing the curriculum of Victoria College, Harris observes that,

> The aim was a broad general education. There were five branches to the collegiate course (classics, mathematics, moral philosophy, rhetoric and belles lettres, theology) and together they provided the perspective and self-knowledge required of the clergyman, the lawyer, and the doctor . . .
> *(Ibid.*, p.44)

In a chapter titled "Professional Education", Harris comments,

> Were our attention confined strictly to the work of degree-granting universities there would be little to record in this chapter, for, despite charters which in almost all cases authorized degrees in law, medicine, and theology, the efforts of the Canadian

> universities in 1860 were concentrated almost entirely on undergraduate programs in arts.
>
> This concentration on an arts course which, as we have seen, was designed to provide a liberal education along classic and classical lines is somewhat surprising in a country faced by a multitude of practical problems requiring for their solution a multitude of skilled professionals -- administrators, engineers, teachers, doctors, lawyers and clergymen. . . . The year 1860 was in fact a moment of transition. The need for a greatly expanded curriculum was generally recognized, but the steps actually being undertaken to meet the situation were tentative, hesitant, and ill-financed. Money was one problem. A scarcity of well-trained professors to organize and to teach professional subjects was a second. A third, and in many respects the most difficult to resolve, was the long arm of tradition. *(Ibid.*, pp.58-59)

Finally, Harris concludes that,

> By 1890 a number of Canadian universities possessed faculties of law, medicine, and theology, and a few could boast of faculties in other professional fields, notably engineering. But in the case of law and medicine, the relationship of the professional faculty to the university remained a largely nominal one, with the university exerting little control over the day-to-day activities of what in effect were proprietary schools; and in the case of theology and engineering the professional faculty could hardly be called independent of the faculty of arts since the professors were also (and primarily) members of that faculty. Hence, the faculty of arts in 1890 remained the dominant one in the Canadian university, and its activities continued to be the chief concern of the university's president. *(Ibid.*, p. 119).

Aside from the feeling of *deja vu* which one might take away from these descriptions of early Canadian universities, the point we should like to make is not that the existence of a tradition of broad undergraduate education in the nineteenth century is any argument for that type of curriculum in the twentieth century. Rather, we should like to argue that a particular type of development in society and the societal needs associated with that development led, eventually, to a change in the relationship between generalist and specialist curricula within the universities and that, as society continues to change, this relationship should not be viewed as static.

Specialist education is normally described as producing professionals who will function primarily within a particular discipline. Generalist education is seen as providing broadly knowledgeable and flexible individuals who can function well in a variety of settings. Both approaches have had their detractors. Specialization has been described as "knowing more and more about less and less until finally you know everything about nothing". The approach of the generalist has been described as "knowing less and less about more and more until finally you know nothing about everything". It has been argued, on the one hand, that we live in an increasingly specialized world and, consequently, that specialized training is the direction of the future. Alternatively, the argument has been made that our occupational and technical needs change so rapidly that it is impossible, in a post-secondary educational process that increasingly spans seven to ten years, to provide specific training that will not be obsolete by the time it is completed. The underlying assumption in these discussions is that society expects, and our students expect, that the education they receive at our hands will allow them to function better and to lead fuller lives in the world in which they will be living, than if they had not received that education. This is not an unreasonable expectation. It is not in any sense a surrender to the unquestioned forces in society that would like to turn our post-secondary educational institutions into manpower training centres. James A. Perkins, former President of Cornell University, has stated succinctly:

> Knowledge acquired must be transmitted, or it dies. Knowledge acquired and transmitted must be used, or it becomes sterile and inert.
>
> (James A. Perkins, The University in Transition Princeton: Princeton University Press, 1966, p.7)

It is our belief that a broadly fashioned, liberal education is of fundamental value to many students and that opportunities for such an education, in addition to opportunities for specialized professional training, should be preserved and expanded during the coming decade. It is also our belief that such an education should be designed so that it is of value to our students, both personally and professionally, and of benefit to society as a whole. The question has been asked,

> In the name of what can one argue for 'cultural values'? What does it mean to be mature or cultivated or educated or self-possessed in a world of radical corruption and violence?
>
> (Eugene Goodheart, Culture and the Radical Conscience Cambridge, Mass.: Harvard University Press, 1973, p. 14).

In the future it may mean something quite different than it has meant traditionally. There is no reason at all to assume that simply requiring students to take courses similar to those their grandparents took will serve to reintroduce the values, the culture, the standards of responsible behavior that it is so easy to avoid in our contemporary society. The curriculum of the medieval scholastic universities will not solve our problems any more than will the curriculum of the nineteenth century German universities.

Specifically, we believe that a serious problem exists and is growing at an accelerated rate, relating to the decision-making capabilities of ordinary citizens as well as individuals who are in senior positions in government, private industry and public service areas such as education and health. These individuals are expected to understand and respond intelligently to a broad spectrum of problems that are individually difficult and collectively interrelated. Specialists in areas such as science, economics, law, ecology, health and education present them with data they are often ill-trained to consume and we all expect decisions they are often ill-prepared to make. It is no longer uncommon for a legislator to be expected, within a period of a few days, to make intelligent and informed decisions on a series of matters as wide ranging as the continued development of nuclear energy plants, health care and retirement benefits for the aged, the relationship between inflation and foreign trade, the implementation of effective manpower training procedures, and policy towards governments in third-world countries where the basic social, political, cultural and religious assumptions are radically different from our own. The dilemma is fundamental. No human being can be an expert in the details of all of these problems. Yet, the problems are often interrelated and decisions made in isolation or ignorance of their broader implications are ineffective at best and harmful at worst. We might term this dilemma "the decision-making problem".

> Particularly as we try to strengthen general education, we must create new forms, not copies of a pale revision of programs past. . . . today's undergraduates will need an unprecedented breadth of knowledge and richness of imagination. The technical and moral subtleties of the decisions they will face can leave one defenceless before the temptation simply to renounce personal responsibility. Undergraduate education

> must prepare the student not to walk away from choices, not to leave them to the experts.
>
> (Adele Simmons, "Harvard Flunks a Test", Harper's, March 1979, p.22)

Moreover, the students we are educating today will reach positions of decision-making power in the next century and will continue in those positions for a quarter of the way through that century. How do we meet our obligations in this respect? How can we even determine what our obligations are to a world we can only dimly imagine?

Part of the answer, we believe, lies in a recognition and a commitment already made by most universities, and certainly by The University of Calgary. That is a commitment to post-secondary education as a life-long process. It should be understood that we are referring here to serious life-long education and not to recreational substitutes for Wednesday night bingo. A problem still exists in convincing individuals who are in the broad decision-making positions -- senior management, senior civil servants, Cabinet Ministers and the like -- that their limited time can be profitably spent in these educational contexts. That will not be an easy job and can only occur if the University's best minds are addressing seriously the best minds outside of the University.

A second part of the solution to the decision-making problem is one that we believe most universities have not faced squarely. North American universities have developed within a tradition of disciplinary specialization based, most commonly, on a departmental administrative structure. Cross-disciplinary, inter-disciplinary and multi-disciplinary efforts have always been viewed with suspicion. Occasionally they have been seen as necessities and universities have then legitimized these efforts by pronouncing the hybrids to be disciplines and establishing departments or programs such as bio-chemistry, geo-physics, social psychology, art history, and the history and philosophy of science. But, on the whole, we have continued to think of courses or programs that cross disciplinary boundaries as being less than legitimate, as professing and practicing no 'discipline' in both senses of the word. Two problems exist with this approach. First, the world does not work within the confines of disciplinary boundaries. Second, students who are taught within restricted disciplinary boundaries often have difficulty thinking outside of those boundaries. It is no longer adequate to define a generalist education in terms of specified numbers of courses within mutually exclusive disciplinary categories. Neither is it adequate to limit curriculum experimentation to piecemeal tinkering with existing courses within existing disciplinary restraints. Given that we are probably not ready to abandon our academic disciplines (nor is there yet any evidence of a superior system with which to replace them), we might at least be willing to live with a system that is separate enough from disciplinary problems to ignore them. We too often think of curriculum reform as having occurred when full-year courses are divided into half-year courses or course prerequisites and sequences are reshuffled. We, in fact, provide little in the way of resources or encouragement for fundamental undergraduate curriculum experimentation in liberal studies at the university level.

In our more specialized world we have come to think of ourselves as engaged almost exclusively in training specialists. With the prestige which is attached to graduate, professional and specialist programs, we have turned our attention increasingly in those directions. We see ourselves, even at the undergraduate level, as training chemists or biologists, economists or psychologists, philosophers or linguists. We seldom, if ever, think of ourselves as educating individuals to be consumers of chemical, biological, economic, psychological, philosophical or political information. We have tended to assume that in order to understand intelligently scientific or economic or legal or ethical arguments, one must be able to function, at least at a rudimentary level, as a scientist, an economist, a lawyer or a philosopher. The solution to many social problems, including the decision-making problem, may begin with a questioning of assumptions such as this.

If some very fundamental and often unrecognized assumptions in post-secondary education are to be questioned and alternative assumptions tested, then some portion of the total resources of a university should be used consistently for this purpose. Clearly, given the present climate of opinion within our universities concerning the sanctity of subject-matter boundaries, the necessity for training students as practitioners of a discipline and the very real budgetary restrictions which do exist, there is little hope of convincing any significant portion of the institution that an already strained budget should be sliced even thinner to accommodate an idea many will find both misguided and frivolous. And yet, without adequate and consistent funding, such interdisciplinary and innovative programs become worse than useless. They become patchwork, hit-and-miss offerings of more-or-less randomly selected courses staffed by faculty members who are often attempting innovation either reluctantly or in addition to a full load of "normal" courses. Not surprisingly, programs offered in this manner, under adverse conditions that would not be tolerated within the standard disciplinary programs, fail. Funds and staff resources designated specifically for consistent research and development in undergraduate, general education curricula are an absolute necessity for any enterprise of this sort. And the test of such innovative curricula is in their actual use as degree-granting programs.

Specifically, within the context of The University of Calgary, there are two distinct problems. First, there is the problem of interdisciplinary undergraduate programs. The development of such programs was given academic approval approximately a decade ago and was housed, administratively, within the Faculty of Arts and Science. Following the division of that Faculty, the responsibility for interdisciplinary programs moved to University College. The problem is that adequate funding has never been provided for these programs. Seven interdisciplinary minor programs now exist within University College. Two of these programs -- Canadian Studies and Law in the Liberal Arts -- have proven to be popular enough that plans are underway to recommend a change in status to that of major programs. Other courses have relatively low enrolment. It is noted that all of these interdisciplinary programs are maintained largely on the basis of "overload" teaching on the part of faculty members and the goodwill of some of the academic departments. This is clearly not an adequate basis for maintaining a number of serious programs and we believe the University should honor its long-standing academic commitment with an adequate financial commitment.

> Recommendation V.5
>
> *That the University Budget Committee give serious consideration and some priority to providing, over the next five years, an adequate financial basis for the continuation and expansion of existing interdisciplinary programs as well as the development of new programs.*

* * *

In making this recommendation we also recognize the obligation of University College to curtail and/or eliminate those interdisciplinary programs for which there is clearly little or no student interest over a reasonable period of time.

The second problem is the need for some academic unit within the University that has the responsibility for the development of innovative undergraduate, general education curricula that may or may not stress interdisciplinary courses. It would seem that the University College might also be the natural home for such curriculum development, but we believe that some care should be exercised to keep clear the distinction between interdisciplinary programs (to which the University already has a long-standing academic commitment) and innovative curricula that address specific social problems such as the decision-making problem.

Recommendation V.6

That the Vice-President (Academic) establish a committee of interested individuals to prepare a proposal for consideration by the University and, if approved, submission to the Department of Advanced Education and Manpower to establish an academic unit (or finance an existing unit) the mandate of which would include the responsibility for developing and offering innovative undergraduate, general education curricula that would better equip our students to lead full and productive lives in an increasingly complex and constantly changing social environment.

* * *

Essentially, two assumptions lie behind the previous two recommendations. First, that any institution dealing in a complex and highly sophisticated "product" must consistently devote a portion of its efforts to research and development or what it is producing will become hopelessly obsolete. Second, that the traditional disciplinary boundaries which exist within most post-secondary institutions, except in the cases of specialized graduate and professional programs, bear little relationship to the way in which increasing numbers of our graduates are required to function in society. As a practical matter it is, of course, also assumed that funds must be made available from outside existing budgets to individuals interested in exploring innovative curricula and that the University must be willing to accept in its midst non-traditional undergraduate programs of liberal education. It is specifically not assumed that such curricula would be useful or attractive to all students or to all faculty members. More traditional programs might well serve the needs of many students. It is recognized, for example, that we will still have to educate practitioners of disciplinary specialties as well as consumers of disciplinary information.

It might be argued that courses designed to help our students lead full and productive lives are not 'innovative' but are a regular part of university education. We agree that there are courses, and even programs, that have been designed specifically with the needs of students and society in mind, and we commend the faculty members among us who have responded with sensitivity to those needs. However, the primary need being addressed remains society's demand for highly skilled professionals within disciplinary specialties. This is a wholly legitimate need and should in no sense be abandoned. We are simply arguing that there are also other needs, that some of these needs change as our society changes, and that universities have not always been as responsive to those changing needs as they might have been.

We believe that part of the solution to many of these problems, such as the decision-making problem, may be to have a reasonably financed unit within the University, a portion of the mandate of which would be to design and offer innovative, general undergraduate degree programs specifically addressed to the perceived needs of students and of society, other than the need for skilled professionals within the academic disciplines.

We see this unit as being innovative in the sense that its courses would not necessarily be restricted to the boundaries of the traditional academic departments, that its criteria for deciding what constituted work credited towards degrees would be more flexible than is usually the case, and that its programs would be more amenable to change than are the traditional academic programs. Further, we see these programs as being highly selective on the basis of interest and ability. The selectivity would be applied not only to students but to the faculty members who were permitted to teach in these programs. Something like a collegial system might be envisaged which would provide a high quality undergraduate education to individuals of exceptional talents. We are not, however, advocating a return to the universities of the twelfth, seventeenth or nineteenth centuries. We would caution against mistaking standardization for standards. Rigidity does not ensure quality. Indeed, in our world the one may well preclude the other. We are also not advocating the kind of flexibility that sees any twenty randomly selected courses at any level as constituting an undergraduate education. What we are advocating is flexible and innovative programs of general undergraduate education, carefully designed and thoughtfully taught, but not limited to specific academic disciplines.

The academic unit which we see playing this role would be a degree-granting Faculty with a core staff of its own as well as staff seconded from other portions of the University. This might well be a revised University College. Again, we would emphasize that such a Faculty would require two things. First, an adequate budget. Second, flexibility in setting degree requirements. The first can only be granted by the Provincial Government, the second can only be granted by the General Faculties Council. In the absence of either the budget or the flexibility, in our view the experiment should not be attempted.

* * *

Maintaining our Mandate - A Changing University in a Changing Society

In attempting the evaluation and planning to which this document addresses itself, it has been necessary to develop, at least implicitly, views of what a university should be and what The University of Calgary can be. Again, we are faced with the fact that universities are heterogeneous institutions that do not reflect one simple perception either of themselves or of the world in which they function. There is, however, one particular perception of universities which is widely expounded and almost as widely believed, namely that universities are 'ivory towers' - out of touch with reality. The stereotype is that of an intellectual Disneyland peopled by unreal characters performing pointless charades for their own amusement in a stage-scenery world. The real situation seems to us to be quite different.

Universities first appeared towards the end of the twelfth century as the *universitas*, a society of masters and students who banded together legally, in much the same manner as the medieval trade guilds, to protect their own interests -- a very worldly beginning. From the start they included "professional" Faculties such as Medicine and Law and included training for positions such as public accountants. Indeed, the institutions were so worldly that in 1163 Pope Alexander III forbade monks to leave their cloistered lives to study in the then emerging university groups. As we pointed out previously, English-speaking

North American universities tended to follow English and Scottish models which emphasized general undergraduate education. However, in the United States following the Land-Grant Act of 1862, and somewhat later in Canada, professional Faculties, including agriculture, engineering and technology, have become important parts of most major universities. Morever, as the concerns of society have changed through the centuries, so universities have changed and developed. Emphases have moved from theology to science and social studies as successive generations of students have attempted to deal with an increasingly complex world in different ways. From the development of insulin to the invention of the transistor to the social and intellectual critiques of Marshall McLuhan to the social/political/moral debate over the Vietnam war, universities have continued to play central roles in the real problems and the real development of our society and our culture. What is seen as unreality when viewed from the outside is often simply a longer and larger perspective when viewed from the inside. If there is one fact that belies the notion that universities are irrelevant it is that totalitarian governments (and would be totalitarian governments), whether of the left or of the right, move quickly to suppress universities when those governments come to power. Such actions as the burning of books, the closing of universities, the physical intimidation of students and faculty, and the introduction of repressive legislation concerning what can be taught and how it can be taught have become the hallmarks of the totalitarian state. One has to wonder why they would bother if the universities are merely irrelevant ivory towers.

This is an important point because it brings out the relevance of what are usually referred to as the "non-professional" components of the university. First of all, the designation is misleading. A fourth-year honours student in physics or geology or psychology or economics or philosophy is receiving professional training just as is the student in engineering or nursing or education. But, more importantly, when totalitarian governments move against universities it is not because they want to limit the number of physicians or architects or scientists or engineers in their society. Rather, they want to limit certain ideas. Only if we are willing to argue that ideas are irrelevant to the continued development of our culture can we argue that the traditional "liberal arts" components of our universities are irrelevant. The seven liberal arts which made up the curriculum of the Latin schools and the early universities were divided into two groups. The *trivium* was composed of grammar, logic and rhetoric. The *quadrivium* was composed of arithmetic, geometry, astronomy and music or harmony. When John of Salisbury, writing in 1159, defended the *trivium* in a work titled The Metalogicon, he did so on the basis of its usefulness. Being able to use language correctly, to think clearly, and to express one's ideas persuasively were, he argued, very practical skills. It is an argument, one feels, that is still defensible today.

The point to be made here is that little, if anything, about a university education is irrelevant to society. Indeed, it is misleading to focus on the nineteen-sixties' magic word "relevance". What can, in fact, be identified are different degrees of immediate contact between some parts of the university and other groups and institutions in society. Physicians, lawyers, engineers, geologists, chemists, psychologists, accountants, teachers, and others must all meet certain minimum requirements set by professional associations and the law if they are to function as practitioners of their specialized disciplines. This places many immediate constraints on the academic units involved. We have already pointed out, for example, that the Faculty of Education not only has to deal with the internal administration of the University, but also with school boards, the Alberta Teachers' Association, the Minister of Education, and the general public. Their freedom of operation is much more limited than, for example, that of the Department of Philosophy. But it would be an error, even a tragic error, to conclude from the different set of relationships that teaching skills are more relevant to society's needs than are ethical sensitivities or the ability to reason logically.

Recognizing the constraints which other institutions within society place on universities, we believe strongly that it is necessary, in society's own interests, to preserve as much of that freedom of operation, that intellectual and pedagogical autonomy, as possible. We have heard much lately about the interest of students in university being limited to a degree and a job. Our experience leads us to doubt this caricature just as it leads us to doubt the caricature of hoards of Ph.D. cabdrivers. But even if it is true that there are individuals who would limit the curricula of universities to manpower-related skills, we believe this move should be resisted. We do not believe that an exposure to Canadian literature is irrelevant in the life of a social worker, although there might not be any demonstrable need for more Canadian literary critics. We do not believe that an engineer should be allowed to remain ignorant of the history of art simply because his job will never require him to make use of that knowledge. It is possible that at one stage of their development some students may perceive learning experiences that do not have an immediate cash value attached to them as being irrelevant to their lives. They are mistaken. The mandate of the university is not simply to produce physicians, lawyers, engineers, geologists, chemists, psychologists, accountants, teachers, etc., but rather to educate thinking, feeling human beings who can, for a portion of their waking existence, function in those capacities.

The Honourable Emmett M. Hall, Chancellor of the University of Saskatchewan, in a convocation address in May, 1980 remarked on the inevitable relationship between the world of education and the world of work. Chancellor Hall then went on to observe,

> But a danger lurks in the shadows. Unless a people is on its guard, the demands of society can be made to determine what is done in education. The society whose educational system gives priority to the economic over the spiritual and emotional needs of man defines its citizens in terms of economic units and in so doing debases them. There is a dignity and nobility of man that has nothing to do with economic considerations. The development of this dignity and nobility is one of education's tasks.
>
> (Hon. Emmett M. Hall "Convocation Speech" 15 May 1980, p.4)

Not only must universities avoid treating individuals as economic units, they must actively resist having such an equation pressed on them.

We have come full circle in this chapter. We began with a discussion of the need for planning; we then argued for the importance of forming research groups built on areas of existing strength and for the importance of interdisciplinary and innovative emphases in general undergraduate education. We have concluded with a discussion of the relationship between the university and the society of which it is a part. We have attempted to show that this relationship is a complex one, that different individuals within the university have different perceptions of this relationship, and that different units within the institution have varying degrees of restraint placed upon them by the roles which they play in relation to society as a whole. Most importantly, we have argued that universities are not, and should not be, simply vocational training institutions. As important as vocational training is in a complex and specialized society, our mandate and our responsibility to our students goes beyond this. We have come full circle in that it is only through planning that we shall be able to maintain our complex relationship to society and continue to fulfill what we see as our responsibilities to our students as well as to the other members of that society.

Therefore, as our final recommendation, we suggest:

Recommendation V.7

That The University of Calgary, while recognizing its complex relationship with and responsibilities to the society which supports its efforts, reaffirm the concepts of intellectual and pedagogical autonomy and the mandate of universities as broadly educational, rather than narrow vocational training, institutions.

* * *

APPENDIX I

MEMBERSHIP OF THE UNIVERSITY PROGRAM REVIEW COMMITTEE

R. B. Bond	Department of English
F. A. Campbell	Department of Geology and Geophysics
D. D. Detomasi	Faculty of Environmental Design
P. J. Krueger	Vice-President (Academic)
B. S. Sheehan	Director, Office of Institutional Research
F. N. Trofimenkoff	Department of Electrical Engineering
J. N. Vickers	Faculty of Physical Education
N. E. Wagner (Chairman)	President and Vice-Chancellor
R. G. Weyant	Department of Psychology

THE UNIVERSITY OF CALGARY

FINGERTIP STATISTICS

	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79	1979-80
FULL-TIME STUDENTS	9 237	9 173	8 780	9 278	9 578	10 950	10 864	10 805	10 644	10 738
PERCENT ANNUAL CHANGE	+16.0	− 0.7	− 4.3	+ 5.7	+ 3.2	+14.3	−0.8	−0.5	−1.5	+ 0.9
PERCENT FRESHMEN	23.5	20.0	19.1	20.9	20.2	22.2	16.2	16.2	16.1	17.4
PERCENT GRADUATE STUDENTS	9.2	9.0	9.0	8.1	8.3	8.2	8.6	8.7	8.7	8.7
PERCENT FEMALE	36.3	36.5	37.2	38.9	40.4	40.8	42.7	43.1	43.3	44.1
PERCENT MARRIED	21.5	21.6	21.0	18.9	16.7	16.1	15.8	15.4	14.9	14.9
PERCENT NON-CANADIAN CITIZENS	11.8	12.7	13.3	13.2	13.2	16.8	15.3	14.8	13.7	10.8
PERCENT FROM OUTSIDE ALBERTA (HOME ADDRESS)	10.0	10.3	11.6	10.5	11.3	11.3	9.3	9.7	8.5	8.9
MEDIAN AGE OF FULL-TIME STUDENTS	21.3	21.2	21.4	21.5	21.4	21.5	21.6	21.8	21.8	21.8
MEDIAN AGE OF FRESHMEN	18.9	18.6	18.7	18.8	18.8	18.8	18.6	18.6	18.6	18.7
PART-TIME STUDENTS—FALL	2 851	3 130	3 447	3 016	3 175	3 389	2 977	2 993	3 038	3 150
PART-TIME STUDENTS—SPRING	–	–	–	1 723	2 007	2 377	2 525	2 967	3 122	2 733
PART-TIME STUDENTS—SUMMER	2 901	3 155	2 748	2 693	2 368	2 394	2 196	2 433	2 174	1 896
DEGREES AND DIPLOMAS GRANTED	1 821	2 164	2 090	2 236	2 197	2 316	2 300	2 376	2 679	2463
COURSE ENROLEES PER FULL-TIME NON-MEDICAL STUDENT	5.2	5.3	5.1	5.0	5.0	4.9	4.7	4.8	4.8	4.7
SECTION ENROLEES PER FULL-TIME NON-MEDICAL STUDENT	7.4	7.4	7.6	7.4	7.5	7.5	7.3	7.7	7.9	7.9
WEEKLY STUDENT HOURS PER FULL-TIME NON-MEDICAL STUDENT	19.4	20.3	20.9	20.7	20.1	19.6	19.1	19.4	19.7	19.8
AVERAGE SECTION SIZE	22.2	19.7	19.8	19.2	19.6	20.7	19.6	18.4	18.0	18.1
FULL-TIME EQUIVALENT ACADEMIC STAFF	1 072	1 158	1 052	1 080	1 141	1 215	1 276	1 322	1 343	1 363
FULL-TIME EQUIVALENT SUPPORT STAFF	1 626	1 760	1 587	1 677	1 677	1 744	1 813	1 861	1 835	1 875
OPERATING REVENUES $'000	29 593	34 136	34 286	37 787	40 490	52 124	61 018	66 910	72 715	79 757
OPERATING EXPENDITURES $'000	29 648	33 425	33 596	36 629	42 020	51 864	59 066	66 077	72 428	79 024
OPERATING EXPENDITURES PER FULL-TIME STUDENT	3 210	3 644	3 826	3 948	4 387	4 736	5 437	6 115	6 805	7 359
ACADEMIC BUILDINGS '000 ASSIGNABLE SQUARE METRES	96.7	100.4	155.5	168.8	174.2	186.2	186.5	184.8	184.7	185.8
TOTAL UNIVERSITY BUILDINGS '000 ASSIGNABLE SQUARE METRES	158.0	159.7	215.3	228.3	233.7	245.8	246.0	244.3	246.8	248.1
NUMBER OF CLASSROOMS	190	204	259	251	262	289	289	293	294	282
NUMBER OF TEACHING LABORATORIES	73	75	121	156	198	212	218	225	267	282